

SCIENTIFIC CALCULATOR

WriteView

EL-W506
EL-W516
MODEL EL-W546

OPERATION MANUAL

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INTRODUCTION

Thank you for purchasing the SHARP Scientific Calculator Model EL-W506/W516/W546.

About the **calculation examples (including some formulas and tables)**, refer to the **calculation example sheet**. Refer to the **number on the right of each title in the manual for use**.

After reading this manual, store it in a convenient location for future reference.

Notes:

- Some of the models described in this manual may not be available in some countries.
- This product uses a period as a decimal point.

Operational Notes

- Do not carry the calculator around in your back pocket, as it may break when you sit down. The display is made of glass and is particularly fragile.
- Keep the calculator away from extreme heat such as on a car dashboard or near a heater, and avoid exposing it to excessively humid or dusty environments.
- Since this product is not waterproof, do not use it or store it where fluids, for example water, can splash onto it. Raindrops, water spray, juice, coffee, steam, perspiration, etc. will also cause malfunction.
- Clean with a soft, dry cloth. Do not use solvents or a wet cloth.
- Do not drop it or apply excessive force.
- Never dispose of batteries in a fire.
- Keep batteries out of the reach of children.
- For the sake of your health, try not to use this product for long periods of time. If you need to use the product for an extended period, be sure to allow your eyes, hands, arms, and body adequate rest periods (about 10–15 minutes every hour).
- If you experience any pain or fatigue while using this product, discontinue use immediately. If the discomfort continues, please consult a doctor.
- This product, including accessories, may change due to upgrading without prior notice.

NOTICE

- SHARP strongly recommends that separate permanent written records be kept of all important data. Data may be lost or altered in virtually any electronic memory product under certain circumstances. Therefore, SHARP assumes no responsibility for data lost or otherwise rendered unusable whether as a result of improper use, repairs, defects, battery replacement, use after the specified battery life has expired, or any other cause.
- SHARP will not be liable nor responsible for any incidental or consequential economic or property damage caused by misuse and/or malfunctions of this product and its peripherals, unless such liability is acknowledged by law.

- Press the RESET switch (on the back), with the tip of a ball-point pen or similar object, only in the following cases:
 - When using for the first time
 - After replacing the battery
 - To clear all memory contents
 - When an abnormal condition occurs and all keys are inoperative

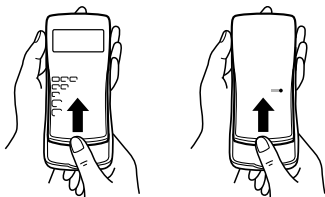
Do not use an object with a breakable or sharp tip. Note that pressing the RESET switch erases all data stored in memory.

If service should be required on this calculator, use only a SHARP servicing dealer, SHARP approved service facility, or SHARP repair service where available.

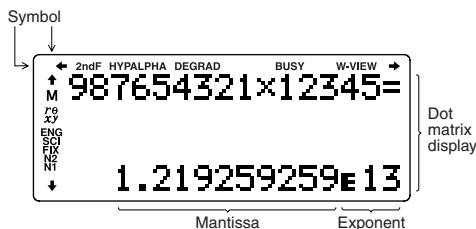
Hard Case



Remove the hard case, holding it with your fingers in the positions shown below.



DISPLAY



- During actual use, not all symbols are displayed at the same time.
- Only the symbols required for the usage currently being explained are shown in the display and calculation examples in this manual.

- ↔/↕**: Indicates that some contents are hidden in the directions shown.
- 2ndF**: Appears when **[2ndF]** is pressed, indicating that the functions shown in orange are enabled.
- HYP**: Indicates that **[hyp]** has been pressed and the hyperbolic functions are enabled. If **[2ndF] [arc hyp]** is pressed, the symbols **2ndF HYP** appear, indicating that inverse hyperbolic functions are enabled.
- ALPHA**: Indicates that **[ALPHA]**, **[STO]** or **[RCL]** has been pressed, and entry (recall) of memory contents and recall of statistics can be performed.
- DEG/RAD/GRAD**: Indicates angular units.
- BUSY**: Appears during the execution of a calculation.
- W-VIEW**: Indicates that the WriteView editor is selected.
- M**: Indicates that a numerical value is stored in the independent memory (M).
- rθ/xy**: Indicates the mode of expression for results in CPLX mode.
- ENG/SCI/FIX/N2/N1**: Indicates the notation used to display a value and changes by SET UP menu. **N1** is displayed on-screen as "NORM1", and **N2** as "NORM2".

BEFORE USING THE CALCULATOR

When using for the first time, press the RESET switch (on the back), with the tip of a ball-point pen or similar object.

Adjusting the Display Contrast

Press **[2ndF] [SETUP] [3]**, then **[+]** or **[-]** to adjust the contrast. Press **[ON/C]** to exit.

Power On and Off

Press **[ON/C]** to turn the calculator on. The data that was on-screen when the power was turned off will appear on the display. Press **[2ndF] [OFF]** to turn the calculator off.

Key Notations Used in this Manual

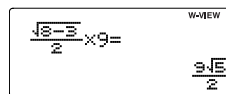
In this manual, key operations are described as follows:

- e^x** **E**: To specify e^x: **[2ndF] [e^x]**
- In**: To specify In: **[In]**
- To specify E: **[ALPHA] [E]**

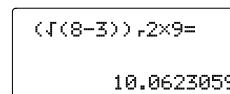
- Functions that are printed in orange above the key require **[2ndF]** to be pressed first before the key. When you specify the memory, press **[ALPHA]** first. Numbers for input values are not shown as keys, but as ordinary numbers.
- Functions that are printed in gray adjacent to the keys are effective in specific modes.
- The multiplication operator "×" is differentiated from the letter "X" in this manual as follows:
 - To specify the multiplication operator: **[×]**
 - To specify the letter "X": **[ALPHA] [X]**

The WriteView and Line Editors

This calculator has the following two editors in NORMAL mode: WriteView and Line. You can select between them in the SET UP menu.



The WriteView editor (default)



The Line editor

Notes:

- The WriteView Editor is only available in NORMAL mode.
- In certain calculation examples, where you see the **LINE** symbol, the key operations and calculation results are shown as they would appear in the Line editor.

Clearing the Entry and Memories

| Operation | Entry (Display) | A-F, M, X, Y*1 | F1-F4, D1-D4*2 | ANS STAT*3 | matA-D*4 | L1-L4*5 |
|-------------------------------------|-----------------|----------------|----------------|------------|----------|---------|
| [ON/C] | ○ | × | × | × | × | × |
| [2ndF] [CA] | ○ | × | × | ○ | ○ | ○ |
| Mode selection ([MODE]) | ○ | × | × | × | × | ○ |
| [2ndF] [M-CLR] [0] *7 | ○ | × | × | × | × | × |
| [2ndF] [M-CLR] [1] [0] *7 | ○ | ○ | ○ | ○ | ○ | ○ |
| [2ndF] [M-CLR] [2] [0] *7,*8 | ○ | ○ | ○ | ○ | ○ | ○ |
| RESET switch*8 | ○ | ○ | ○ | ○ | ○ | ○ |

○: Clear ×: Retain

- *1 Press **[ON/C]** **[STO]** and then choose a memory to clear one variable memory.
- *2 Formula memories and definable memories. See "Memory Calculations".
- *3 Statistical data (entered data)
- *4 Matrix memories (matA, matB, matC, and matD)
- *5 List memories (L1, L2, L3, and L4)
- *6 Cleared when changing between sub-modes in STAT mode.
- *7 See "Memory clear key".
- *8 The username you stored using the name display function will be cleared as well.

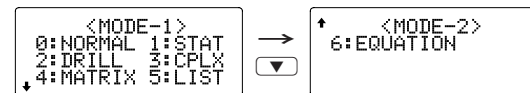
Memory clear key

Press **[2ndF] [M-CLR]** to display the menu.

- To initialize the display settings, press **[0]**. The parameters are set as follows:
 - Angular unit: DEG
 - Display notation: NORM1
 - N-base: DEC
- To clear all variables and memories (A-F, M, X, Y, F1-F4, D1-D4, ANS, STAT, matA-D, and L1-L4) at once, press **[1] [0]**.
- To RESET the calculator, press **[2] [0]**. The RESET operation will erase all data stored in memory and restore the calculator's default settings. You can do the same thing by pressing the RESET switch on the back of the calculator.

[M-CLR]
0: DISP 1: MEMORY
2: RESET

Mode Selection



NORMAL mode: **[MODE] [0]** (default)

Used to perform arithmetic operations and function calculations.

STAT mode: **[MODE] [1]**

Used to perform statistical operations.

DRILL mode: **[MODE] [2]**

Used to practice math and multiplication table drills.

CPLX mode: **[MODE] [3]**

Used to perform complex number calculations.

MATRIX mode: **[MODE] [4]**

Used to perform matrix calculations.

LIST mode: **[MODE] [5]**

Used to perform list calculations.

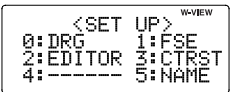
EQUATION mode: **[MODE] [6]**

Used to solve equations.

SET UP Menu

Press **[2ndF]** **[SETUP]** to display the SET UP menu.

Press **[ON/C]** to exit the SET UP menu.



Determination of the angular unit

The following three angular units (degrees, radians, and grads) can be specified.

- DEG (°): **[2ndF]** **[SETUP]** **[0]** **[0]** (default)
- RAD (rad): **[2ndF]** **[SETUP]** **[0]** **[1]**
- GRAD (g): **[2ndF]** **[SETUP]** **[0]** **[2]**

Selecting the display notation and decimal places

Five display notation systems are used to display calculation results: Two settings of Floating point (NORM1 and NORM2), Fixed decimal point (FIX), Scientific notation (SCI), and Engineering notation (ENG).

- When **[2ndF]** **[SETUP]** **[1]** **[0]** (FIX) or **[2ndF]** **[SETUP]** **[1]** **[2]** (ENG) is pressed, "TAB(0–9)?" will be displayed and the number of decimal places (TAB) can be set to any value between 0 and 9.
- When **[2ndF]** **[SETUP]** **[1]** **[1]** (SCI) is pressed, "SIG(0–9)?" will be displayed and the number of significant digits can be set to any value between 0 and 9. Entering 0 will set a 10-digit display.

Setting the floating point number system in scientific notation

Two settings are used to display a floating-point number: NORM1 (the default) and NORM2. A number is automatically displayed in scientific notation outside a preset range:

- NORM1 (**[2ndF]** **[SETUP]** **[1]** **[3]**): $0.000000001 \leq |x| \leq 9,999,999,999$
- NORM2 (**[2ndF]** **[SETUP]** **[1]** **[4]**): $0.01 \leq |x| \leq 9,999,999,999$

Selecting the editor

Two editors are available in NORMAL mode:

- The WriteView editor (W-VIEW): **[2ndF]** **[SETUP]** **[2]** **[0]** (default)
- The Line editor (LINE): **[2ndF]** **[SETUP]** **[2]** **[1]**

Note: No entries will be cleared when you change the editor.

Adjusting the display contrast

Press **[2ndF]** **[SETUP]** **[3]**, then **[+]** or **[–]** to adjust the contrast. Press **[ON/C]** to exit.

Insert and overwrite entry methods

When using the Line editor, you can change the entry method from "INSERT" (the default) to "OVERWRITE".

After you switch to the overwrite method (by pressing **[2ndF]** **[SETUP]** **[4]** **[1]**), the triangular cursor will change to a rectangular one, and the number or function underneath it will be overwritten as you make entries.

Name display function

You can save a username in this calculator. When you turn the power off, the saved username is displayed momentarily.

Up to 32 characters may be saved, split over two lines.

Entering and editing the username:

- Press **[2ndF]** **[SETUP]** **[5]**. The editing screen appears with a flashing cursor.
- Use **[▲]** and **[▼]** to scroll through the available characters. The following characters can be entered (listed in the order that they appear):
Letters (A to Z, uppercase only), numbers (0 to 9), slash (/), hyphen (-), colon (:), apostrophe ('), comma (,), period (.), and space ().
Press **[2ndF]** **[▲]** to jump to "A", and press **[2ndF]** **[▼]** or **[ON/C]** to jump to the space.
- Pressing **[◀]** or **[▶]** moves the cursor to the left or right. To modify a character, use **[◀]** or **[▶]** to move the cursor to the character, then select another character using **[▲]** or **[▼]**.
Press **[2ndF]** **[◀]** or **[2ndF]** **[▶]** to jump to the beginning of the first line or the end of the second.
- Repeat steps 2 and 3 above to continue entering characters.
- Press **[=]** to save.

Note: Press **[2ndF]** **[CA]** in the editing screen to clear all the characters.



Notes:

- The WriteView editor can only be used in NORMAL mode.
- If the equation grows too large, it may extend off the edge of the display after you obtain the result. If you want to see the entire equation, press **[◀]** or **[▶]** to return to the editing screen.

Displaying calculation results

When possible, calculation results will be displayed using fractions, $\sqrt{}$, and π . When you press **[CHANGE]**, the display will cycle through the following display styles:

- Mixed fractions (with or without π) \rightarrow improper fractions (with or without π) \rightarrow decimal numbers
- Proper fractions (with or without π) \rightarrow decimal numbers
- Irrational numbers (square roots, fractions made using square roots) \rightarrow decimal numbers

Notes:

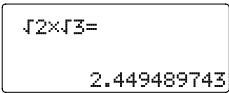
- In the following cases, calculation results may be displayed using $\sqrt{}$:
 - Arithmetic operations and memory calculations
 - Trigonometric calculations
- In trigonometric calculations, when entering values such as those in the table to the right, results may be shown using $\sqrt{}$.
- Calculation results may extend off the edges of the screen. You can see those parts by pressing **[◀]** or **[▶]** (depending on whether the left or right portion is hidden).
- Improper/proper fractions will be converted to and displayed as decimal numbers if the number of digits used in their expression is greater than nine. In the case of mixed fractions, the maximum number of displayable digits (including integers) is eight.
- If the number of digits in the denominator of a fractional result that uses π is greater than three, the result is converted to and displayed as a decimal number.

| | Entry value |
|------|--------------------------------|
| DEG | multiples of 15 |
| RAD | multiples of $\frac{1}{12}\pi$ |
| GRAD | multiples of $\frac{50}{3}$ |

The Line Editor

Entry and display

In the Line editor, you can enter and display equations line by line.



Notes:

- Up to three lines of text may be viewed on the screen at one time.
- If the length of the equation exceeds three lines, parts of it may be hidden from view after calculation. If you want to see the rest of the equation, press **[◀]** or **[▶]** to return to the editing screen.
- In the Line editor, calculation results are displayed in decimal form or line fraction notation if possible.

Editing the Equation

Just after obtaining an answer, pressing **[◀]** brings you to the end of the equation and pressing **[▶]** brings you to the beginning. Press **[◀]**, **[▶]**, **[▲]**, or **[▼]** to move the cursor. Press **[2ndF]** **[◀]** or **[2ndF]** **[▶]** to jump the cursor to the beginning or the end of the equation.

In the WriteView editor, you can use **[▲]** and **[▼]** to move the cursor up and down—between the numerator and denominator, for example.

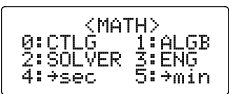
Back space and delete key

To delete a number or function, move the cursor to the right of it, then press **[BS]**. You can also delete a number or function that the cursor is directly over by pressing **[2ndF]** **[DEL]**.

The MATH Menu

Other functions may be available on this calculator besides those printed on the key pad. These functions are accessed using the MATH menu. The MATH menu has different contents for each mode.

Press **[MATH]** to display the MATH menu. For example, in NORMAL mode, you can call the functions shown on the right.



Notes:

- When the **[↑]** or **[↓]** symbols are displayed, you can use **[▲]** or **[▼]** to display any hidden menu items.
- [MATH]** does not function when entering values or items in STAT, MATRIX, LIST, or EQUATION modes, or into solver functions or simulation calculations.

ENTERING, DISPLAYING, AND EDITING THE EQUATION

The WriteView Editor

Entry and display

In the WriteView editor, you can enter and display fractions or certain functions as you would write them.



The CATALOG menu

Using the CATALOG menu, you can select functions and variables that are available for what you are doing in the currently selected mode. To display the CATALOG menu, press **MATH** **0**.

- Press **▲** or **▼** to move the cursor (↗) and press **ENTER** to select.
- Press **◀** or **▶** to scroll up or down.
- Press **2ndF** **▲** or **2ndF** **▼** to jump to the first or last item.

Note: You cannot bring up the CATALOG menu when entering values or items in STAT, MATRIX, LIST, or EQUATION modes, or into solver functions or simulation calculations.

Multi-line Playback Function

This calculator is equipped with a function to recall previous equations and answers in NORMAL or CPLX modes. A maximum of 340 characters can be stored in memory. When the memory is full, stored equations will be deleted to make room, starting with the oldest.

Pressing **▲** will display the previous equation. Further pressing **▲** will display preceding equations (after returning to the previous equation, press **▼** to view equations in order). In addition, **2ndF** **▲** can be used to jump to the oldest equation, and **2ndF** **▼** to jump to the newest one.

- To edit an equation after recalling it, press **◀** or **▶**.
- The multi-line memory will be cleared by the following operations:

2ndF **CA**, mode change, RESET, N-base conversion, angular unit conversion, editor change (**2ndF** **SETUP** **2** **0** or **2ndF** **SETUP** **2** **1**), and memory clear (**2ndF** **M-CLR** **1** **0**).

- Equations that have one result require an additional eleven characters' worth of memory to store in order to hold the result.
- In addition to the amount of memory needed to store an equation, the WriteView editor will require a certain amount for the sake of display.
- Equations also include calculation ending instructions, such as "=".

Priority Levels in Calculation

This calculator performs operations according to the following priority:

- ① Fractions ($1 \div 4$, etc.) ② \angle , Engineering prefixes
- ③ Functions preceded by their argument (x^{-1} , x^2 , $n!$, etc.)
- ④ y^x , $x\sqrt{}$ ⑤ Implied multiplication of a memory value ($2Y$, etc.)
- ⑥ Functions followed by their argument (\sin , \cos , $(-)$, etc.)
- ⑦ Implied multiplication of a function ($2\sin 30$, $A - \frac{1}{4}$, etc.) ⑧ nCr, nPr, $\rightarrow cv$ ⑨ \times , \div ⑩ $+$, $-$ ⑪ AND ⑫ OR, XOR, XNOR ⑬ $=$, M+, M-, \Rightarrow M, \blacktriangleright DEG, \blacktriangleright RAD, \blacktriangleright GRAD, DATA, $\rightarrow r\theta$, $\rightarrow xy$, and other calculation ending instructions
- If parentheses are used, parenthesized calculations have precedence over any other calculations.

SCIENTIFIC CALCULATIONS

- Press **MODE** **0** to select NORMAL mode.
- In each example, press **ON/C** to clear the display first. Unless otherwise specified, calculation examples are performed in the WriteView editor (**2ndF** **SETUP** **2** **0**) with the default display settings (**2ndF** **M-CLR** **0**).

Arithmetic Operations

- The closing parenthesis **)** just before **=** or **M+** may be omitted.

Constant Calculations

- In constant calculations, the addend becomes a constant. Subtraction and division are performed in the same manner. For multiplication, the multiplicand becomes a constant.
- In constant calculations, constants will be displayed as K.
- Constant calculations can be performed in NORMAL or STAT modes.

Functions

- Refer to the calculation examples for each function.
- In the Line editor, the following symbols are used:
 - ⌘ : to indicate an expression's power. (y^x , **2ndF** **e^x**, **2ndF** **10^x**)
 - ▮ : to separate integers, numerators, and denominators. ($\frac{a}{b}$, **2ndF** $\frac{ab}{c}$)
- When using **2ndF** **log_x** or **2ndF** **abs** in the Line editor, values are entered in the following way:
 - logn (base, value)
 - abs value

Integral/Differential Functions

Integral and differential calculations can be performed in NORMAL mode.

Note: Since integral and differential calculations are performed based on the following equations, correct results may not be obtained, in certain rare cases, when performing special calculations that contain discontinuous points.

Integral calculation (Simpson's rule):

$$S = \frac{1}{3}h\{f(a) + 4\{f(a+h) + f(a+3h) + \cdots + f(a+(N-1)h)\} + 2\{f(a+2h) + f(a+4h) + \cdots + f(a+(N-2)h)\} + f(b)\} \begin{cases} h = \frac{b-a}{N} \\ N=2n \\ a \leq x \leq b \end{cases}$$

Differential calculation: $f'(x) = \frac{f(x + \frac{dx}{2}) - f(x - \frac{dx}{2})}{dx}$

Performing integral calculations

- Press **∫dx**.
- Specify the following parameters: range of integral (initial value (a), end value (b)), function with variable x , and number of subintervals (n).

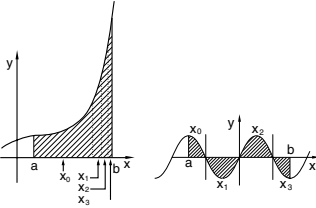
You do not need to specify the number of subintervals. If the number of subintervals is not specified, the default value of $n = 100$ will be used.
- Press **=**.

Notes:

- Parameters are entered in the following way:

WriteView editor:
 \int_a^b function[, subintervals]dx
Line editor:
 $f(\text{function}, a, b[, \text{subintervals}])$
- Integral calculations, depending on the integrands and subintervals included, require longer calculation time. During calculation, the **BUSY** symbol will be displayed. To cancel calculation, press **ON/C**.

Note that there will be greater integral errors when there are large fluctuations in the integral values during minute shifting of the integral range and for periodic functions, etc., where positive and negative integral values exist depending on the interval.



For the former case, divide integral intervals as small as possible. For the latter case, separate the positive and negative values. Following these tips will allow you to obtain results from calculations with greater accuracy and will also shorten the calculation time.

Performing differential calculations

- Press **2ndF** **d/dx**.
- Specify the following parameters: function with variable x , value of x , and minute interval (dx).

You do not need to specify the minute interval. If the minute interval is not specified, it will automatically be set to 10^{-5} (while $x = 0$), or $|x| \times 10^{-5}$ (while $x \neq 0$).
- Press **=**.

Note: Parameters are entered in the following way:

WriteView editor:
 $\frac{d(\text{function})}{dx} \Big|_{x = \text{value of } x}, \text{ minute interval}$
Line editor:
 $d/dx (\text{function}, \text{value of } x[, \text{minute interval}])$

Σ Function

The Σ function returns the cumulative sum of a given expression from an initial value to an end value in NORMAL mode.

Performing Σ calculations

- Press **2ndF** **Σ**.
- Specify the following parameters: initial value, end value, function with variable x , and increment (n).

You do not need to specify the increment. If the increment is not specified, the default value of $n = 1$ will be used.
- Press **=**.

Note: Parameters are entered in the following way:

WriteView editor:
end value
 $\Sigma(\text{function}[, \text{increment}])$
 $x = \text{initial value}$
Line editor:
 $\Sigma(\text{function}, \text{initial value}, \text{end value}[, \text{increment}])$

Random Function

The random function has four settings. (This function cannot be selected while using the N-base function.) To generate further random numbers in succession, press **ENTER**. Press **ON/C** to exit.

Random numbers

A pseudo-random number, with three significant digits from 0 up to 0.999, can be generated by pressing **2ndF** **RANDOM** **0** **ENTER**.

Note: In the WriteView editor, if the result is not 0 it can be shown as a fraction or decimal using **CHANGE**.

Random dice

To simulate a die-rolling, a random integer between 1 and 6 can be generated by pressing **2ndF** **RANDOM** **1** **ENTER**.

Random coin

To simulate a coin flip, 0 (heads) or 1 (tails) can be randomly generated by pressing **2ndF** **RANDOM** **2** **ENTER**.

Random integer

An integer between 0 and 99 can be generated randomly by pressing **2ndF** **RANDOM** **3** **ENTER**.

Angular Unit Conversions

Each time **2ndF** **DRG** is pressed, the angular unit changes in sequence.

Memory Calculations

| Mode | ANS | M, F1–F4 | A–F, X, Y | D1–D4 |
|--------|-----|----------|-----------|-------|
| NORMAL | ○ | ○ | ○ | ○ |
| STAT | ○ | ○ | ○ | ○ |
| CPLX | ○ | ○ | × | ○ |
| MATRIX | ○ | ○ | ○ | ○ |
| LIST | ○ | ○ | ○ | ○ |

○: Available ×: Unavailable

Temporary memories (A–F, X and Y)

Press **STO** and a variable key to store a value in memory.
Press **RCL** and a variable key to recall the value from that memory. To place a variable in an equation, press **ALPHA** and a variable key.

Independent memory (M)

In addition to all the features of temporary memories, a value can be added to or subtracted from an existing memory value.
Press **ON/C** **STO** **M** to clear the independent memory (M).

Last answer memory (ANS)

The calculation result obtained by pressing **=** or any other calculation ending instruction is automatically stored in the last answer memory.

When the calculation result is in matrix or list form, the full matrix or list is not stored into ANS memory. Only the value of the element covered by the cursor is stored.

Notes:

- Calculation results from the functions indicated below are automatically stored in the X or Y memories replacing any existing values.
 - $\rightarrow r\theta$, $\rightarrow xy$: X memory (r or x), Y memory (θ or y)
 - Two x^y values from a quadratic regression calculation in STAT mode: X memory (1:), Y memory (2:)
- Use of **RCL** or **ALPHA** will recall the value stored in memory using up to 14 digits.

Formula memories (F1–F4)

You can store expressions in formula memories (F1–F4). Storing a new expression in a memory space will automatically replace any content that may already exist there.

Notes:

- Expressions that are stored from the WriteView editor cannot be recalled from within the Line editor, and vice versa.
- You can only recall expressions stored from the Line editor when entering values or items in STAT, MATRIX, LIST, or EQUATION modes, or into solver functions or simulation calculations.
- Any recalled expressions will overwrite any expressions that are currently being entered.
- You cannot store formulas in formula memories when entering values or items in STAT, MATRIX, LIST, or EQUATION modes, or into solver functions or simulation calculations.

Definable memories (D1–D4)

You can store functions or operations in definable memories (D1–D4).

- To store a function or operation, press **[STO]**, followed by a definable memory key (**[D1]**, **[D2]**, **[D3]**, or **[D4]**), followed by the operation you want to store. Menu-related operations, such as **[2ndF]** **[SETUP]**, cannot be stored. Press **[ON/C]** to return to the previous display.
- To call a stored function or operation, press the corresponding memory key. Calling a stored function will not work if the function that is called would be unusable in the current context.
- Any functions or operations that are stored in a definable memory will be replaced when you save a new one into that memory.
- You cannot store functions or operations in definable memories when entering values or items in STAT, MATRIX, LIST, or EQUATION modes, or into solver functions or simulation calculations.

Chain Calculations 11

The previous calculation result can be used in the subsequent calculation. However, it cannot be recalled after entering multiple instructions or when the calculation result is in matrix/list format.

Fraction Calculations 12

Arithmetic operations and memory calculations can be performed using fractions. In NORMAL mode, conversion between a decimal number and a fraction can be performed by pressing **[CHANGE]**.

Notes:

- Improper/proper fractions will be converted to and displayed as decimal numbers if the number of digits used in their expression is greater than nine. In the case of mixed fractions, the maximum number of displayable digits (including integers) is eight.
- To convert a sexagesimal value to a fraction, first convert it by pressing **[2ndF]** **[↔DEG]**.

Binary, Pental, Octal, Decimal, and Hexadecimal Operations (N-base) 13

Conversions can be performed between N-base numbers in NORMAL mode. The four basic arithmetic operations, calculations with parentheses, and memory calculations can also be performed, along with the logical operations AND, OR, NOT, NEG, XOR, and XNOR on binary, pental, octal, and hexadecimal numbers.

Conversion to each system is performed with the following keys:

[2ndF] **[↔BIN]** (“BIN” appears), **[2ndF]** **[↔PEN]** (“PEN” appears), **[2ndF]** **[↔OCT]** (“OCT” appears), **[2ndF]** **[↔HEX]** (“HEX” appears), **[2ndF]** **[↔DEC]** (“BIN”, “PEN”, “OCT”, and “HEX” disappear)

Note: The hexadecimal numbers A–F are entered by pressing

[CNST], **[y^x]**, **[x²]**, **[log]**, **[ln]**, and **[i(x,y)]**.

In the binary, pental, octal, and hexadecimal systems, fractional parts cannot be entered. When a decimal number having a fractional part is converted into a binary, pental, octal, or hexadecimal number, the fractional part will be truncated. Likewise, when the result of a binary, pental, octal, or hexadecimal calculation includes a fractional part, the fractional part will be truncated. In the binary, pental, octal, and hexadecimal systems, negative numbers are displayed as a complement.

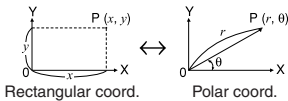
Time, Decimal, and Sexagesimal Calculations 14

You can convert between decimal and sexagesimal numbers, and from sexagesimal numbers to seconds or minutes. In addition, the four basic arithmetic operations and memory calculations can be performed using the sexagesimal system. Notation for sexagesimal is as follows:

12°34'56.78"
Degree Minute Second

Coordinate Conversions 15

- Before performing a calculation, select the angular unit.
- The calculation result is automatically stored in the X and Y memories (r or x in X memory, and θ or y in Y memory).
- The results of coordinate conversions will be displayed as decimal numbers even in the WriteView editor.



Physical Constants and Metric Conversions 16

Calculations using physical constants

To recall a constant, press **[CNST]**, then select a physical constant from the list. (Each item is labeled with a 2-digit number.)

- To scroll up or down the list of constants, press **[▲]** (**[◀]**) or **[▼]** (**[▶]**). Use **[2ndF]** **[▲]** (**[◀]**) or **[2ndF]** **[▼]** (**[▶]**) to jump to the first or last page.
- Enter the first digit of the 2-digit item number to jump to the page containing the number that begins with that digit.
- When you enter the second digit, the constant is displayed automatically according to the display and decimal placement settings.
- Physical constants can be recalled in NORMAL (excluding N-base), STAT, CPLX, MATRIX, LIST, and EQUATION modes.
- The following table lists the physical constants. See the calculation example sheet for physical constant symbols and units.

Note: Physical constants and metric conversions are based on the 2006 CODATA recommended values, or on the 1995 Edition of the “Guide for the Use of the International System of Units (SI)” released by NIST (National Institute of Standards and Technology).

| No. | Constant | No. | Constant |
|-----|--|-----|---|
| 01 | Speed of light in vacuum | 27 | Stefan-Boltzmann constant |
| 02 | Newtonian constant of gravitation | 28 | Avogadro constant |
| 03 | Standard acceleration of gravity | 29 | Molar volume of ideal gas (273.15 K, 101.325 kPa) |
| 04 | Electron mass | 30 | Molar gas constant |
| 05 | Proton mass | 31 | Faraday constant |
| 06 | Neutron mass | 32 | Von Klitzing constant |
| 07 | Muon mass | 33 | Electron charge to mass quotient |
| 08 | Atomic mass unit-kilogram relationship | 34 | Quantum of circulation |
| 09 | Elementary charge | 35 | Proton gyromagnetic ratio |
| 10 | Planck constant | 36 | Josephson constant |
| 11 | Boltzmann constant | 37 | Electron volt |
| 12 | Magnetic constant | 38 | Celsius Temperature |
| 13 | Electric constant | 39 | Astronomical unit |
| 14 | Classical electron radius | 40 | Parsec |
| 15 | Fine-structure constant | 41 | Molar mass of carbon-12 |
| 16 | Bohr radius | 42 | Planck constant over 2 pi |
| 17 | Rydberg constant | 43 | Hartree energy |
| 18 | Magnetic flux quantum | 44 | Conductance quantum |
| 19 | Bohr magneton | 45 | Inverse fine-structure constant |
| 20 | Electron magnetic moment | 46 | Proton-electron mass ratio |
| 21 | Nuclear magneton | 47 | Molar mass constant |
| 22 | Proton magnetic moment | 48 | Neutron Compton wavelength |
| 23 | Neutron magnetic moment | 49 | First radiation constant |
| 24 | Muon magnetic moment | 50 | Second radiation constant |
| 25 | Compton wavelength | 51 | Characteristic impedance of vacuum |
| 26 | Proton Compton wavelength | 52 | Standard atmosphere |

Metric conversions

Enter a value to be converted, then press **[2ndF]** **[CONV]**, and select a metric conversion by entering its 2-digit number.

- The metric conversion list is used in the same manner as the list of physical constants.
- Unit conversions can be performed in NORMAL (excluding N-base), STAT, MATRIX, LIST, and EQUATION modes.
- The following table lists units used in metric conversion. See the calculation example sheet for the metric conversion reference table.

| No. | Remarks | No. | Remarks |
|-----|-------------------------------|-----|---|
| 01 | in : inch | 23 | fl oz(US) : fluid ounce (US) |
| 02 | cm : centimeter | 24 | mL : milliliter |
| 03 | ft : foot | 25 | fl oz(UK) : fluid ounce (UK) |
| 04 | m : meter | 26 | mL : milliliter |
| 05 | yd : yard | 27 | cal _m : calorie _m |
| 06 | m : meter | 28 | J : joule |
| 07 | mi : mile | 29 | cal ₁₅ : calorie (15°C) |
| 08 | km : kilometer | 30 | J : joule |
| 09 | n mi : nautical mile | 31 | cal _{IT} : calorie _{IT} |
| 10 | m : meter | 32 | J : joule |
| 11 | acre : acre*1 | 33 | hp : horsepower (UK) |
| 12 | m ² : square meter | 34 | W : watt |
| 13 | oz : ounce (avoirduois) | 35 | ps : horsepower (metric) |
| 14 | g : gram | 36 | W : watt |
| 15 | lb : pound (avoirduois) | 37 | (kgf/cm ²) |
| 16 | kg : kilogram | 38 | Pa : pascal |
| 17 | °F : degree Fahrenheit | 39 | atm : atmosphere |
| 18 | °C : degree Celsius | 40 | Pa : pascal |
| 19 | gal (US) : gallon (US) | 41 | (1 mmHg = 1 Torr) |
| 20 | L : liter | 42 | Pa : pascal |
| 21 | gal (UK) : gallon (UK) | 43 | (kgf·m) |
| 22 | L : liter | 44 | N·m : newton meter |

*1 based on US survey foot

Calculations Using Engineering Prefixes 17

Calculation can be executed in NORMAL mode (excluding N-base) using the following 9 types of prefixes.

| | Prefix | Operation | Unit |
|---|---------|-----------|-------------------|
| k | (kilo) | MATH 3 0 | 10 ³ |
| M | (Mega) | MATH 3 1 | 10 ⁶ |
| G | (Giga) | MATH 3 2 | 10 ⁹ |
| T | (Tera) | MATH 3 3 | 10 ¹² |
| m | (milli) | MATH 3 4 | 10 ⁻³ |
| μ | (micro) | MATH 3 5 | 10 ⁻⁶ |
| n | (nano) | MATH 3 6 | 10 ⁻⁹ |
| p | (pico) | MATH 3 7 | 10 ⁻¹² |
| f | (femto) | MATH 3 8 | 10 ⁻¹⁵ |

Modify Function 18

Decimal calculation results are internally obtained in scientific notation, with up to 14 digits in the mantissa. However, since calculation results are displayed in the form designated by the display notation and the number of decimal places indicated, the internal calculation result may differ from that shown in the display. By using the modify function ((2ndF) (MDF)), the internal value is converted to match that of the display, so that the displayed value can be used without change in subsequent operations.

- When using the WriteView editor, if the calculation result is displayed using fractions or irrational numbers, press (CHANGE) to convert it to decimal form first.
- The modify function can be used in NORMAL, STAT, MATRIX, or LIST modes.

Simulation Calculation (ALGB) 19

If you have to find values consecutively using the same expression, such as plotting a curve line for 2x² + 1, or finding the variable values for 2x + 2y =14, once you enter the expression, all you have to do is to specify the value for the variable in the equation.

Usable variables: A–F, M, X and Y

- Simulation calculations can only be executed in NORMAL mode.
- Calculation ending instructions other than (=) cannot be used.

Performing calculations

- Press (MODE) (0).
- Input an expression with at least one variable.
- Press (MATH) (1).
- The variable entry screen will appear. Enter a value, then press (ENTER) to confirm. The calculation result will be displayed after you have entered a value for each variable used in the equation.
 - After completing the calculation, press (MATH) (1) to perform calculations using the same equation.
 - Variables and numerical values stored in the memories will be displayed in the variable entry screen. If you do not want to change any values, simply press (ENTER).
 - Performing simulation calculation will cause values in memory to be overwritten with new values.

Solver Function 20

The solver function finds the value for x that reduces the entered expression to zero.

- This function uses Newton's method to obtain an approximation. Depending on the function (e.g. periodic) or start value, an error may occur (ERROR 02) due to there being no convergence to the solution for the equation.
- The value obtained by this function may include a margin of error. If it is larger than acceptable, recalculate the solution after changing the "Start" and dx values.
- Change the "Start" value (e.g. to a negative value) or dx value (e.g. to a smaller value) if:
 - no solution can be found (ERROR 02).
 - more than two solutions appear to be possible (e.g. a cubic equation).
 - to improve arithmetic precision.
- The calculation result is automatically stored in the X memory.
- Press (ON/C) to exit the solver function.

Performing solver function

- Press (MODE) (0).
- Input an expression with an x variable.
- Press (MATH) (2).
- Enter a "Start" value and press (ENTER). The default value is "0".
- Enter a dx value (minute interval).
- Press (ENTER).

STATISTICAL CALCULATIONS

Statistical calculations can be performed in STAT mode.

There are eight sub-modes within STAT mode. Press (MODE) (1), then press the number key that corresponds to your choice:

- (0) (Stat 0 [SD]): Single-variable statistics
- (1) (Stat 1 [LINE]): Linear regression
- (2) (Stat 2 [QUAD]): Quadratic regression
- (3) (Stat 3 [E-EXP]): Euler exponential regression
- (4) (Stat 4 [LOG]): Logarithmic regression
- (5) (Stat 5 [POWER]): Power regression
- (6) (Stat 6 [INV]): Inverse regression
- (7) (Stat 7 [G-EXP]): General exponential regression

Statistical Calculations and Variables 21

The following statistics can be obtained for each statistical calculation (refer to the table below):

Single-variable statistical calculation

Statistics of ① and the value of the normal probability function.

Linear regression calculation

Statistics of ① and ②. In addition, the estimate of y for a given x (estimate y') and the estimate of x for a given y (estimate x').

Quadratic regression calculation

Statistics of ① and ②, and coefficients a, b, c in the quadratic regression formula (y = a + bx + cx²). (For quadratic regression calculations, no correlation coefficient (r) can be obtained.) When there are two x' values, each value will be displayed with "1:" or "2:", and stored separately in the X and Y memories.

Euler exponential regression, logarithmic regression, power regression, inverse regression, and general exponential regression calculations

Statistics of ① and ②. In addition, the estimate of y for a given x and the estimate of x for a given y. (Since the calculator converts each formula into a linear regression formula before actual calculation takes place, it obtains all statistics, except coefficients a and b, from converted data rather than entered data.)

| | | |
|---|--------------|--|
| ① | \bar{x} | Mean of samples (x data) |
| | s_x | Sample standard deviation (x data) |
| | σ_x | Population standard deviation (x data) |
| | n | Number of samples |
| | Σx | Sum of samples (x data) |
| | Σx^2 | Sum of squares of samples (x data) |
| ② | \bar{y} | Mean of samples (y data) |
| | s_y | Sample standard deviation (y data) |
| | σ_y | Population standard deviation (y data) |
| | Σy | Sum of samples (y data) |
| | Σy^2 | Sum of squares of samples (y data) |
| | Σxy | Sum of products of samples (x, y) |
| | r | Correlation coefficient |
| | a | Coefficient of regression equation |
| | b | Coefficient of regression equation |
| | c | Coefficient of quadratic regression equation |

- Use (ALPHA) and (RCL) to perform a variable calculation in STAT mode.
- (CHANGE) does not function in STAT mode.

Data Entry and Correction 22

Before entering new data, clear the memory contents ((2ndF) (CA)).

Data entry

Single-variable data

Data (DATA)
Data (x,y) frequency (DATA) (To enter multiples of the same data)

Two-variable data

Data x (x,y) data y (DATA)
Data x (x,y) data y (x,y) frequency (DATA) (To enter multiples of the same data x and y)

Note: Up to 100 data items can be entered. With the single-variable data, a data item without frequency assignment is counted as one data item, while an item assigned with frequency is stored as a set of two data items. With the two-variable data, a set of data items without frequency assignment is counted as two data items, while a set of items assigned with frequency is stored as a set of three data items.

Data correction

Correction before pressing (DATA) immediately after a data entry:

Delete incorrect data with (ON/C), then enter the correct data.

Correction after pressing (DATA):

Use (▲) and (▼) to display the previously entered data set.

Press (▼) to display the data set in ascending (oldest first) order. To reverse the display order to descending (latest first), press the (▲) key. Press (2ndF) (▲) or (2ndF) (▼) to jump the cursor to the beginning or end of the data set.

Each data set is displayed with "X:", "Y:", or "F:".

| | | |
|------------|-----|-----------------|
| DATA SET=4 | 75. | Data set number |
| X: | 3. | Data x |
| F: | | Frequency |

| | | |
|------------|-----|-----------------|
| DATA SET=4 | 21. | Data set number |
| X: | 40. | Data x |
| Y: | 3. | Data y |
| F: | | Frequency |

Display and move the cursor to the data item to be modified by using (▲) and (▼), enter the correct value, then press (DATA) or (ENTER).

- To delete a data set, display and move the cursor to an item of the data set to delete by using (▲) and (▼), then press (2ndF) (CD). The data set will be deleted.
- To add a new data set, press (ON/C) to exit the display of previously entered data and input the values, then press (DATA).

Statistical Calculation Formulas 23

| Type | Regression formula |
|---------------------|-------------------------|
| Linear | $y = a + bx$ |
| Quadratic | $y = a + bx + cx^2$ |
| Euler exponential | $y = a \cdot e^{bx}$ |
| Logarithmic | $y = a + b \cdot \ln x$ |
| Power | $y = a \cdot x^b$ |
| Inverse | $y = a + b \frac{1}{x}$ |
| General exponential | $y = a \cdot b^x$ |

An error will occur when:

- The absolute value of the intermediate result or calculation result is equal to or greater than 1×10^{100} .
- The denominator is zero.
- An attempt is made to take the square root of a negative number.
- No solution exists in the quadratic regression calculation.

Normal Probability Calculations 24

In STAT mode, the three probability density functions can be accessed under the MATH menu, with a random number used as a normal distribution variable.

Notes:

- P(t), Q(t), and R(t) will always take positive values, even when t < 0, because these functions follow the same principle used when solving for an area.
- Values for P(t), Q(t), and R(t) are given to six decimal places.
- The standardization conversion formula is as follows:

$$t = \frac{x - \bar{x}}{\sigma_x}$$

DRILL MODE

Math Drill: (MODE) (2) (0)

Math operation questions with positive integers and 0 are displayed randomly. It is possible to select the number of questions and operator type.

Multiplication Table (X Table): (MODE) (2) (1)

Questions from each row of the multiplication table (1 to 12) are displayed serially or randomly.

To exit DRILL mode, press (MODE) and select another mode.

Using Math Drill and X Table

- Press (MODE) (2) (0) for Math Drill or (MODE) (2) (1) for X Table.
- Math Drill:** Use (▲) and (▼) to select the number of questions (25, 50, or 100).
X Table: Use (▲) and (▼) to select a row in the multiplication table (1 to 12).
- Math Drill:** Use (◀) and (▶) to select the operator type for questions (+, −, ×, ÷, or +−×÷).
X Table: Use (◀) and (▶) to select the order type ("Serial" or "Random").
- Press (ENTER) to start.
When using Math Drill or X Table (random order only), questions are randomly selected and will not repeat except by chance.

5. Enter your answer. If you make a mistake, press **[ON/C]** or **[BS]** to clear any entered numbers, and enter your answer again.
6. Press **[ENTER]**.
- If the answer is correct, “✔” appears and the next question is displayed.
 - If the answer is wrong, “✖” appears and the same question is displayed. This will be counted as an incorrect answer.
 - If you press **[ENTER]** without entering an answer, the correct answer is displayed and then the next question is displayed. This will be counted as an incorrect answer.
7. Continue answering the series of questions by entering the answer and pressing **[ENTER]**.
8. After you finish, press **[ENTER]** and the number and percentage of correct answers are displayed.
9. Press **[ENTER]** to return to the initial screen for your current drill.

Math Drill sample

Q 1/25

13+ 9=_

⋮

Q 8/25

48÷ 5=8

✔ 7×11=7

✖ 7×11=_

⋮

Math Drill

Question:25

Type:÷-x+

✔ : 20(80%)

Current question/
Total questions

Question

See step 6 above.

Number of questions

Operator type

Percentage correct

Correct answers

X Table sample

× Table 12

7× 1=_

⋮

× Table 8

7× 4=28

✖ 7× 5=36

✖ 7× 5=_

⋮

× Table

Multiply by:07

Type:Serial

✔ : 8(67%)

Total remaining questions

Question

See step 6 above.

Multiplicand

Order type

Percentage correct

Correct answers

Ranges of Math Drill Questions

- The range of questions for each operator type is as follows.
- + **Addition operator:** “0 + 0” to “20 + 20”
 - **Subtraction operator:** “0 - 0” to “20 - 20”; answers are positive integers and 0.
 - × **Multiplication operator:** “1 × 0” or “0 × 1” to “12 × 12”
 - ÷ **Division operator:** “0 ÷ 1” to “144 ÷ 12”; answers are positive integers from 1 to 12 and 0, dividends of up to 144, and divisors of up to 12.
 - + - × ÷ **Mixed operators:** Questions within all the above ranges are displayed.

COMPLEX NUMBER CALCULATIONS

To carry out addition, subtraction, multiplication, and division using complex numbers, press **[MODE]** **[3]** to select CPLX mode. Results of complex number calculations are expressed using two systems:

- ① **[2ndF]** **[→xy]**: Rectangular coordinate system
(The **xy** symbol appears.)
- ② **[2ndF]** **[→rθ]**: Polar coordinate system
(The **rθ** symbol appears.)

Complex Number Entry

- ① Rectangular coordinates
x-coordinate **[+]** y-coordinate **[i]**
or x-coordinate **[+]** **[i]** y-coordinate
- ② Polar coordinates
r **[∠]** θ
r: absolute value θ: argument
- On selecting another mode, the imaginary part of any complex number stored in the independent memory (M) and the last answer memory (ANS) will be cleared.

- A complex number expressed in rectangular coordinates with the y-value equal to zero, or expressed in polar coordinates with the angle equal to zero, is treated as a real number.
- Press **[MATH]** **[1]** to return the complex conjugate of the specified complex number.

MATRIX CALCULATIONS

You can store and calculate up to four matrices containing up to four rows and four columns each in MATRIX mode.

Press **[MODE]** **[4]** to enter MATRIX mode.

Note: You can use the MATH menu in MATRIX mode to edit, recall, and store matrices, as well as to call matrix-specific functions.

Entering and Storing Matrices

Before performing matrix calculations, a matrix must be created. Follow the steps below to enter and store matrices.

1. Press **[MODE]** **[4]** to enter MATRIX mode.
2. Press **[MATH]** **[2]** to bring up the matrix entry screen.
 - Any matrix data remaining in the buffer, along with any previously entered, loaded, or calculated matrix data, will be displayed.
3. Define the matrix dimensions (up to four rows by four columns) by entering the required dimensions using the number keys and pressing **[ENTER]**.

matrix: 2×2

0

0

0

0

▶

0.

Matrix dimensions (row × column)

Element fields

Entry field

Matrix entry screen (example)

4. Enter each element in the matrix by entering a value in the entry field and pressing **[ENTER]**.
 - Each matrix element can display up to seven digits (the decimal point counts as one digit). If an element exceeds seven digits in length, it may be displayed in exponent notation within the matrix.
 - A maximum of three rows by three columns can be displayed at one time. Use **[▲]**, **[▼]**, **[◀]**, and **[▶]** to move the cursor through the matrix.
5. When you have entered a value for each element, press **[ON/C]** to exit the matrix entry screen.
6. Press **[MATH]** **[4]** and select a memory (matA–matD) to store the newly-created matrix in.

Modifying a stored matrix

1. To load a stored matrix into the matrix entry screen, press **[MATH]** **[3]**, then select the memory (matA–matD) that holds the matrix you wish to modify.
 - Loading new data into the screen will automatically replace any data that may already exist there.
2. Using the matrix entry screen, you can modify the values of elements in the matrix. Assign new values wherever necessary and press **[ENTER]** after each one.
 - If you wish to modify the number of rows or columns, first press **[ON/C]** **[MATH]** **[2]**. You can then enter new values for the matrix dimensions.
3. When you have finished making changes, press **[ON/C]** to exit the matrix entry screen.
4. Press **[MATH]** **[4]** and select a memory (matA–matD) to store the newly-created matrix in.

Using Matrices in Calculations

Matrices stored in memories (matA–matD) can be used in arithmetic calculations (with the exception of division between matrices) and calculations that use x^3 , x^2 , and x^{-1} . You can also use the following matrix-specific functions that are available in the MATH menu.

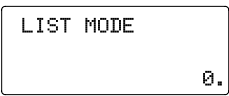
| | |
|--------------------------------|--|
| dim (matrix name, row, column) | Returns a matrix with dimensions changed as specified. |
| fill (value, row, column) | Fills each element with a specified value. |
| cumul matrix name | Returns the cumulative matrix. |
| aug (matrix name, matrix name) | Appends the second matrix to the first matrix as new columns. The first and second matrices must have the same number of rows. |
| identity value | Returns the identity matrix with specified value of rows and columns. |
| rnd_mat (row, column) | Returns a random matrix with specified values of rows and columns. |
| det matrix name | Returns the determinant of a square matrix. |

| | |
|---------------------------------------|--|
| trans <i>matrix name</i> | Returns the matrix with the columns transposed to rows and the rows transposed to columns. |
| mat→list (MATH 7) | Creates lists with elements from the left column of each matrix. (matA→L1, matB→L2, matC→L3, matD→L4) Mode changes from MATRIX mode to LIST mode. |
| matA→list (MATH 8) | Creates lists with elements from each column of the matrix. (matA→L1, L2, L3, L4) Mode changes from MATRIX mode to LIST mode. |

- Notes:
- When the matrix entry screen is displayed, you cannot perform matrix calculations because the MATH menu is not available.
 - If the calculation result is a matrix, it will be displayed in the matrix entry screen (note that this replaces any existing data in the buffer). To store the calculation result, first press **(ON/C)** to exit the matrix entry screen. Press **(MATH) 4** and select a memory (matA–matD) to store the newly-created matrix in.
 - When the calculation results are in matrix form, pressing neither **(◀)** nor **(▶)** will bring you back to the original expression.

LIST CALCULATIONS27

You can store and calculate up to four lists of up to sixteen elements each in LIST mode.
Press **(MODE) 5** to enter LIST mode.

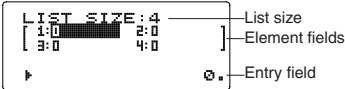


Note: You can use the MATH menu in LIST mode to edit, recall, and store lists, as well as to call list-specific functions.

Entering and Storing Lists

Before performing list calculations, a list must be created. Follow the steps below to enter and store lists.

- Press **(MODE) 5** to enter LIST mode.
- Press **(MATH) 2** to bring up the list entry screen.
 - Any list data remaining in the buffer, along with any previously entered, loaded, or calculated list data, will be displayed.
- Define the list size (up to sixteen elements) by entering a value using the number keys and pressing **(ENTER)**.



List entry screen (example)

- Enter each element in the list by entering a value in the entry field and pressing **(ENTER)**.
 - Each list element can display up to eight digits (the decimal point counts as one digit). If an element exceeds eight digits in length, it will be displayed in exponent notation within the list.
 - A maximum of six elements can be displayed at one time. Use **(▲)**, **(▼)**, **(◀)**, and **(▶)** to move the cursor through the list.
- When you have entered a value for each element, press **(ON/C)** to exit the list entry screen.
- Press **(MATH) 4** and select a memory (L1–L4) to store the newly-created list in.

Modifying a stored list

- To load a stored list into the list entry screen, press **(MATH) 3**, then select the memory (L1–L4) that holds the list you wish to modify.
 - Loading new data into the screen will automatically replace any data that may already exist there.
- Using the list entry screen, you can modify the values of elements in the list. Assign new values wherever necessary and press **(ENTER)** after each one.
 - If you wish to modify the size of a list, first press **(ON/C) (MATH) 2**. You can then enter new values for the list size.
- When you have finished making changes, press **(ON/C)** to exit the list entry screen.
- Press **(MATH) 4** and select a memory (L1–L4) to store the newly-created list in.

Using Lists in Calculations

Lists stored in memories (L1–L4) can be used in arithmetic calculations and calculations that use x^3 , x^2 , and x^{-1} . You can also use the following list-specific functions that are available in the MATH menu.

| | |
|--|--|
| sortA <i>list name</i> | Sorts list in ascending order. |
| sortD <i>list name</i> | Sorts list in descending order. |
| dim (<i>list name, size</i>) | Returns a list with size changed as specified. |
| fill (<i>value, size</i>) | Enters the specified value for all items. |
| cumul <i>list name</i> | Sequentially cumulates each item in the list. |
| df_ <i>list list name</i> | Returns a new list using the difference between adjacent items in the list. |
| aug (<i>list name, list name</i>) | Returns a list appending the specified lists. |
| min <i>list name</i> | Returns the minimum value in the list. |
| max <i>list name</i> | Returns the maximum value in the list. |
| mean <i>list name</i> | Returns the mean value of items in the list. |
| med <i>list name</i> | Returns the median value of items in the list. |
| sum <i>list name</i> | Returns the sum of items in the list. |
| prod <i>list name</i> | Returns the multiplication of items in the list. |
| stdDv <i>list name</i> | Returns the standard deviation of the list. |
| vari <i>list name</i> | Returns the variance of the list. |
| o_prod (<i>list name, list name</i>) | Returns the outer product of 2 lists (vectors). |
| i_prod (<i>list name, list name</i>) | Returns the inner product of 2 lists (vectors). |
| abs_ <i>list list name</i> | Returns the absolute value of the list (vector). |
| list→mat (MATH 7) | Creates matrices with left column data from each list. (L1→matA, L2→matB, L3→matC, L4→matD) Mode changes from LIST mode to MATRIX mode. |
| list→matA (MATH 8) | Creates a matrix with column data from each list. (L1, L2, L3, L4→matA) Mode changes from LIST mode to MATRIX mode. |

Notes:

- When the list entry screen is displayed, you cannot perform list calculations because the MATH menu is not available.
- If the calculation result is a list, it will be displayed in the list entry screen (note that this replaces any existing data in the buffer). To store the calculation result, first press **(ON/C)** to exit the list entry screen. Press **(MATH) 4** and select a memory (L1–L4) to store the newly-created list in.
- When the calculation results are in list form, pressing neither **(◀)** nor **(▶)** will bring you back to the original expression.

EQUATION SOLVERS28

The results obtained by these functions may include a margin of error.

Simultaneous Linear Equations

Simultaneous linear equations with two unknowns (2-VLE) or with three unknowns (3-VLE) may be solved using the following functions.

① 2-VLE: **(MODE) 6 0**

$$\begin{cases} a_1x + b_1y = c_1 \\ a_2x + b_2y = c_2 \end{cases} \quad |D| = \begin{vmatrix} a_1 & b_1 \\ a_2 & b_2 \end{vmatrix}$$

② 3-VLE: **(MODE) 6 1**

$$\begin{cases} a_1x + b_1y + c_1z = d_1 \\ a_2x + b_2y + c_2z = d_2 \\ a_3x + b_3y + c_3z = d_3 \end{cases} \quad |D| = \begin{vmatrix} a_1 & b_1 & c_1 \\ a_2 & b_2 & c_2 \\ a_3 & b_3 & c_3 \end{vmatrix}$$

- If the determinant D = 0, an error occurs.
- If the absolute value of an intermediate result or calculation result is 1×10^{100} or more, an error occurs.

Solving simultaneous linear equations

- Press **(MODE) 6 0** or **(MODE) 6 1**.
- Enter the value for each coefficient (a_1 , etc.).
 - Coefficients can be entered using ordinary arithmetic operations.
 - To clear the entered coefficient, press **(ON/C)**.
 - Press **(▲)** or **(▼)** to move the cursor up or down through the coefficients. Press **(2ndF) (▲)** or **(2ndF) (▼)** to jump to the first or last coefficient.
- When all coefficients have been entered, press **(ENTER)** to solve the equation.
 - While the solution is displayed, press **(ENTER)** or **(ON/C)** to return to the coefficient entry display. To clear all the coefficients, press **(2ndF) (CA)**.

Quadratic and Cubic Equations

Quadratic ($ax^2 + bx + c = 0$) or cubic ($ax^3 + bx^2 + cx + d = 0$) equations may be solved using the following functions.

① Quadratic equation solver: **(MODE) 6 2**

② Cubic equation solver: **(MODE) 6 3**

Solving quadratic and cubic equations

- Press **(MODE) 6 2** or **(MODE) 6 3**.
- Coefficients for these equations can be entered in the same manner as those for simultaneous linear equations.

ERRORS AND CALCULATION RANGES

Errors

An error will occur if an operation exceeds the calculation ranges, or if a mathematically illegal operation is attempted. When an error occurs, pressing **(◀)** or **(▶)** automatically moves the cursor back to the place in the equation where the error occurred. Edit the equation or press **(ON/C)** or **(2ndF) (CA)** to clear the equation.

Error codes and error types

ERROR 01: Syntax error

- An attempt was made to perform an invalid operation.
Ex. 2 **(+)** **(−)** 5 **=**

ERROR 02: Calculation error

- The absolute value of an intermediate or final calculation result equals or exceeds 10^{100} .
- An attempt was made to divide by zero (or an intermediate calculation resulted in zero).
- The calculation ranges were exceeded while performing calculations.

ERROR 03: Nesting error

- The available number of buffers was exceeded. (There are 10 buffers* for numeric values and 64 buffers for calculation instructions).
- * 5 buffers in CPLX mode, and 1 buffer for matrix/list data.

ERROR 04: Data over error

- Data items exceeded 100 in STAT mode.

ERROR 07: Definition error

- Matrix/List definition error or the attempted entering of an invalid value.

ERROR 08: DIM unmatched error

- Matrix/List dimensions inconsistent while calculating.

ERROR 09: Invalid DIM error

- Size of matrix/list exceeds calculation range.

ERROR 10: Undefined error

- Undefined matrix/list used in calculation.

Alert Messages29

Cannot delete!

- The selected item cannot be deleted by pressing **(BS)** or **(2ndF) (DEL)** in the WriteView editor.
Ex. **(2ndF) (√)** 5 **(▶)** **(x²)** **(◀)** **(BS)**

In this example, delete the exponent before attempting to delete the parentheses.

Cannot call!

- The function or operation stored in definable memory (D1 to D4) cannot be called.
Ex. An attempt was made to recall a statistical variable from within NORMAL mode.
- Expressions stored in formula memories (F1 to F4) cannot be called.

Buffer full!

- The equation (including any calculation ending instructions) exceeded its maximum input buffer (159 characters in the WriteView editor or 161 characters in the Line editor). An equation may not exceed its maximum input buffer.

Calculation Ranges

Replacement Procedure

- Within the ranges specified, this calculator is accurate to ± 1 of the 10th digit of the mantissa. However, a calculation error increases in continuous calculations due to accumulation of each calculation error. (This is the same for y^x , $x\sqrt{}$, $n!$, e^x , \ln , Matrix/List calculations, etc., where continuous calculations are performed internally.) Additionally, a calculation error will accumulate and become larger in the vicinity of inflection points and singular points of functions.

Calculation ranges
 $\pm 10^{-99}$ to $\pm 9.999999999 \times 10^{99}$ and 0.
If the absolute value of an entry or a final or intermediate result of a calculation is less than 10^{-99} , the value is considered to be 0 in calculations and in the display.

Display of results using $\sqrt{}$
Calculation results may be displayed using $\sqrt{}$ when all of the following conditions are met:

- When intermediate and final calculation results are displayed in the following form:

$$\pm \frac{a\sqrt{b}}{e} \pm \frac{c\sqrt{d}}{f}$$

- When each coefficient falls into the following ranges:
 $1 \leq a < 100$; $1 < b < 1,000$; $0 \leq c < 100$;
 $1 \leq d < 1,000$; $1 \leq e < 100$; $1 \leq f < 100$
- When the number of terms in the intermediate and final calculation results is one or two.

Note: The result of two fractional terms that include $\sqrt{}$ will be reduced to a common denominator.

BATTERY REPLACEMENT

Notes on Battery Replacement

- Improper handling of batteries can cause electrolyte leakage or explosion. Be sure to observe the following handling rules:
- Make sure the new battery is the correct type.
 - When installing, orient the battery properly as indicated in the calculator.
 - The battery is factory-installed before shipment, and may be exhausted before it reaches the service life stated in the specifications.

Notes on erasure of memory contents

When the battery is replaced, the memory contents are erased. Erasure can also occur if the calculator is defective or when it is repaired. Make a note of all important memory contents in case accidental erasure occurs.

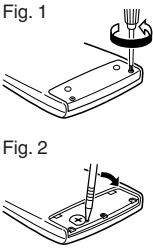
When to Replace the Battery

If the display has poor contrast or nothing appears on the display when $\overline{\text{ON/C}}$ is pressed in dim lighting, even after adjusting the display contrast, it is time to replace the battery.

Cautions

- An exhausted battery left in the calculator may leak and damage the calculator.
- Fluid from a leaking battery accidentally entering an eye could result in serious injury. Should this occur, wash with clean water and immediately consult a doctor.
- Should fluid from a leaking battery come in contact with your skin or clothes, immediately wash with clean water.
- If the product is not to be used for some time, to avoid damage to the unit from a leaking battery, remove it and store in a safe place.
- Do not leave an exhausted battery inside the product.
- Keep batteries out of the reach of children.
- Explosion risk may be caused by incorrect handling.
- Do not throw batteries into a fire as they may explode.

1. Turn the power off by pressing $\overline{\text{2ndF}}$ $\overline{\text{OFF}}$.
2. Remove the two screws. (Fig. 1)
3. Slide the battery cover slightly and lift it to remove.
4. Remove the used battery by prying it out with a ball-point pen or other similar pointed device. (Fig. 2)
5. Install one new battery. Make sure the “+” side is facing up.
6. Replace the cover and screws.
7. Press the RESET switch (on the back) with the tip of a ball-point pen or similar object.
8. Adjust the display contrast. See “Adjusting the Display Contrast”.



- Make sure that the display appears as shown below. If the display does not appear as shown, remove the battery, reinstall it, and check the display once again.



Automatic Power Off Function

This calculator will turn itself off to save battery power if no key is pressed for approximately 10 minutes.

SPECIFICATIONS

| | |
|--|--|
| Calculation features: | Scientific calculations, complex number calculations, equation solvers, statistical calculations, etc. |
| Drill features: | Math Drill and Multiplication Table |
| Display: | 96 × 32 dot matrix liquid crystal display |
| Display of calculation results: | Mantissa: 10 digits Exponent: 2 digits |
| Internal calculations: | Mantissas of up to 14 digits |
| Pending operations: | 64 calculations 10 numeric values (5 numeric values in CPLX mode, and 1 numeric value for Matrix/List data.) |
| Power source: | Built-in solar cells 1.5 V $\overline{\text{---}}$ (DC): Backup battery (Alkaline battery (LR44 or equivalent) × 1) |
| Operating time: (varies according to use and other factors) | Approx. 3,000 hours when continuously displaying 55555. at 25°C (77°F), using the alkaline battery only |
| Operating temperature: | 0°C–40°C (32°F–104°F) |
| External dimensions: | 79.6 mm (W) × 161.5 mm (D) × 15.5 mm (H) 3-1/8" (W) × 6-11/32" (D) × 5/8" (H) |
| Weight: | Approx. 102 g (0.23 lb) (including battery) |
| Accessories: | Battery × 1 (installed), operation manual, calculation examples, and hard case |

FOR MORE INFORMATION ABOUT SCIENTIFIC CALCULATORS

Visit our Web site.
<http://sharp-world.com/calculator/>

WriteView

EL-W506
EL-W516
EL-W546

CALCULATION EXAMPLES
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ESEMPI DI CALCOLO
REKENVOORBEELDEN
PÉLDASZÁMÍTÁSOK
PŘÍKLADY VÝPOČTŮ
RÄKNEEEXEMPEL
LASKENTAESIMERKKEJÄ
UDREGNINGSEKSEMPLER

ตัวอย่างการคำนวณ

نماذج للحسابات

CONTOH-CONTOH PERHITUNGAN

계산 예

SHARP CORPORATION

PRINTED IN CHINA / IMPRIMÉ EN CHINE / IMPRESO EN CHINA
07HGK (TINSZ1308EHZZ)

| | |
|---------------------------------------|---|
| 1 SET UP | |
| 100000 ÷ 3 = | |
| [NORM1] | <div>ON/C100000÷3</div> <div>=CHANGECHANGE33'333.33333</div> |
| → [FIX: TAB 2] | <div>2ndFSETUP102</div> <div>23'333.33</div> |
| → [SCI: SIG 2] | <div>2ndFSETUP112</div> <div>3.3E04</div> |
| → [ENG: TAB 2] | <div>2ndFSETUP122</div> <div>33.33E03</div> |
| → [NORM1] | <div>2ndFSETUP13</div> <div>33'333.33333</div> |
| 3 ÷ 1000 = | |
| [NORM1] | <div>ON/C3÷1000=</div> <div>CHANGE0.003</div> |
| → [NORM2] | <div>2ndFSETUP14</div> <div>3.E-03</div> |
| → [NORM1] | <div>2ndFSETUP13</div> <div>0.003</div> |
| 2 CHANGE | |
| $\frac{2}{5} + \frac{3}{4} =$ | <div>ON/C2a/b5►</div> <div>+a/b3►4</div> <div>=</div> <div>1$\frac{3}{20}$</div> <div>CHANGE</div> <div>23$\frac{23}{20}$</div> <div>CHANGE</div> <div>1.15</div> <div>CHANGE</div> <div>1$\frac{3}{20}$</div> |
| $\sqrt{3} \times \sqrt{5} =$ | <div>2ndF√3►×</div> <div>2ndF√5=</div> <div>√15</div> <div>CHANGE</div> <div>3.872983346</div> |
| $\sqrt{2} \div 3 + \sqrt{5} \div 5 =$ | <div>2ndF√2►÷3</div> <div>+2ndF√5►÷5</div> <div>÷5=</div> <div>3√5+5√215</div> <div>CHANGE</div> <div>0.918618116</div> |


| | | |
|--|--|----------------------|
| sin 45 = | <div>sin45=</div> <div>CHANGE</div> <div>0.707106781</div> | $\frac{\sqrt{2}}{2}$ |
| 2cos ⁻¹ 0.5 [rad] = | <div>2ndFSETUP01</div> <div>22ndFcos⁻¹0.5=</div> <div>CHANGE</div> <div>2.094395102</div> | $\frac{2}{3}\pi$ |
| 3 ▲▼ | | |
| | <div>2ndFCA</div> <div>0.</div> | |
| ① 3(5 + 2) = | <div>3(5+2)=</div> <div>21.</div> | |
| ② 3 × 5 + 2 = | <div>3×5+2=</div> <div>17.</div> | |
| ③ (5 + 3) × 2 = | <div>(5+3)×2=</div> <div>16.</div> | |
| → ① | <div>2ndF▲</div> <div>21.</div> | |
| → ② | <div>▼</div> <div>17.</div> | |
| → ③ | <div>▼</div> <div>16.</div> | |
| → ② | <div>▲</div> <div>17.</div> | |
| 4 + − × ÷ () (−) Exp | | |
| 45 + 285 ÷ 3 = | <div>ON/C45+285÷3</div> <div>=</div> <div>140.</div> | |
| (18 + 6) ÷ (15 − 8) = | <div>(18+6)÷</div> <div>(15−8)=</div> <div>3$\frac{3}{7}$</div> | |
| 42 × −5 + 120 = | <div>42×(−)5+120</div> <div>=</div> <div>-90</div> | |
| (5 × 10 ³) ÷ (4 × 10 ⁻³) = | <div>5Exp3÷</div> <div>4Exp(−)3=</div> <div>1'250'000.</div> | |
| 5 | | |
| 34 + 57 = | <div>34+57=</div> <div>91.</div> | |
| 45 + 57 = | <div>45=</div> <div>102.</div> | |
| 68 × 25 = | <div>68×25=</div> <div>1'700.</div> | |
| 68 × 40 = | <div>40=</div> <div>2'720.</div> | |
| 6 sin cos tan sin⁻¹ cos⁻¹ tan⁻¹ π hyp arc hyp ln log log_eX e^x e 10^x X⁻¹ X⁻² X⁻³ √ y^x x√ x√ x√ n! nPr nCr % abs | | |
| | <div>2ndFM-CLR0</div> <div>0.</div> | |
| sin 60 [°] = | <div>ON/Csin60=</div> <div>CHANGE</div> <div>0.866025403</div> | $\frac{\sqrt{3}}{2}$ |
| cos $\frac{\pi}{4}$ [rad] = | <div>2ndFSETUP01</div> <div>cos2ndFπa/b4=</div> <div>CHANGE</div> <div>0.707106781</div> | $\frac{\sqrt{2}}{2}$ |
| tan ⁻¹ 1 [g] = | <div>2ndFSETUP02</div> <div>2ndFtan⁻¹1=</div> <div>2ndFSETUP00</div> <div>50.</div> | |
| (cosh 1.5 + sinh 1.5) ² = | <div>ON/C(hyp cos</div> <div>1.5+ hyp sin</div> <div>1.5)X²=</div> <div>20.08553692</div> | |
| tanh ⁻¹ $\frac{5}{7} =$ | <div>2ndFarc hyp tan (</div> <div>5÷7)=</div> <div>0.895879734</div> | |
| ln 20 = | <div>ln20=</div> <div>2.995732274</div> | |
| log 50 = | <div>log50=</div> <div>1.698970004</div> | |
| log ₂ 16384 = | <div>2ndF(log_eX2►16384=</div> <div>14.</div> | |
| LINE | <div>2ndF(log_eX2 (x^y)16384)</div> <div>=</div> <div>14.</div> | |
| e ³ = | <div>2ndFe^x3=</div> <div>20.08553692</div> | |
| 1 ÷ e = | <div>1÷ALPHAe</div> <div>=</div> <div>0.367879441</div> | |
| 10 ^{1.7} = | <div>2ndF10^x1.7=</div> <div>50.11872336</div> | |
| $\frac{1}{6} + \frac{1}{7} =$ | <div>62ndFX⁻¹+7</div> <div>2ndFX⁻¹=</div> <div>CHANGE</div> <div>0.309523809</div> | $\frac{13}{42}$ |

| | | | | | | | | | | | | | | |
|--|--|-------------------------|--|-------------------------|-----|--------------|-------------|-----|---|-----------|------|----------------|-------------|--|
| 8 ⁻² − 3 ⁴ × 5 ² = | <div>8y^x(−)2►</div> <div>−3y^x4►</div> <div>×5X²=</div> <div>CHANGE</div> <div>−2024$\frac{63}{64}$</div> <div>CHANGE</div> <div>−$\frac{129599}{64}$</div> <div>CHANGE</div> <div>−2'024.984375</div> | | | | | | | | | | | | | |
| LINE | <div>8y^x(−)2−</div> <div>3y^x4×5</div> <div>X²=</div> <div>CHANGE</div> <div>−2'024.984375</div> <div>CHANGE</div> <div>−2024r63r64</div> <div>CHANGE</div> <div>−129599r64</div> | | | | | | | | | | | | | |
| (12 ³) $\frac{1}{4} =$ | <div>(12y^x3</div> <div>►)(y^x</div> <div>1a/b4=</div> <div>6.447419591</div> | | | | | | | | | | | | | |
| LINE | <div>(12y^x3)</div> <div>y^x1a/b4=</div> <div>6.447419591</div> | | | | | | | | | | | | | |
| 8 ³ = | <div>82ndFX³=</div> <div>512.</div> | | | | | | | | | | | | | |
| $\sqrt{49} - 4\sqrt{81} =$ | <div>2ndF√49►−</div> <div>2ndF√81=</div> <div>4.</div> | | | | | | | | | | | | | |
| LINE | <div>2ndF√49−</div> <div>2ndF√81=</div> <div>4.</div> | | | | | | | | | | | | | |
| $\sqrt[3]{27} =$ | <div>2ndF√327=</div> <div>3.</div> | | | | | | | | | | | | | |
| 4! = | <div>42ndFnl=</div> <div>24.</div> | | | | | | | | | | | | | |
| 10P ₃ = | <div>102ndFnPr3=</div> <div>720.</div> | | | | | | | | | | | | | |
| 5C ₂ = | <div>52ndFnCr2=</div> <div>10.</div> | | | | | | | | | | | | | |
| 500 × 25% = | <div>500×252ndF%=</div> <div>125.</div> | | | | | | | | | | | | | |
| 120 ÷ 400 = ?% | <div>120÷4002ndF%=</div> <div>30.</div> | | | | | | | | | | | | | |
| 500 + (500 × 25%) = | <div>500+252ndF%=</div> <div>625.</div> | | | | | | | | | | | | | |
| 400 − (400 × 30%) = | <div>400−302ndF%=</div> <div>280.</div> | | | | | | | | | | | | | |
| 5 − 9 = | <div>2ndFabs5−9=</div> <div>4.</div> | | | | | | | | | | | | | |
| LINE | <div>2ndFabs(5−9</div> <div>)=</div> <div>4.</div> | | | | | | | | | | | | | |
| • The range of the results of inverse trigonometric functions | | | | | | | | | | | | | | |
| • Plage des résultats des fonctions trigonométriques inverses | | | | | | | | | | | | | | |
| • Der Ergebnisbereich für inverse trigonemetrische Funktionen | | | | | | | | | | | | | | |
| • El rango de los resultados de funciones trigonométricas inversas | | | | | | | | | | | | | | |
| • Gama dos resultados das trigonométricas inversas | | | | | | | | | | | | | | |
| • La gamma dei risultati di funzioni trigonometriche inverse | | | | | | | | | | | | | | |
| • Het bereik van de resultaten van inverse trigonometrie | | | | | | | | | | | | | | |
| • Az inverz trigonometriai funkciók eredmény-tartománya | | | | | | | | | | | | | | |
| • Rozsah výsledků inverzních trigonometrických funkcí | | | | | | | | | | | | | | |
| • Omfång för resultaten av omvända trigonometriska funktioner | | | | | | | | | | | | | | |
| • Käänteisten trigonometristen funktioiden tulosten alue | | | | | | | | | | | | | | |
| • Område for resultater af omvendte trigonometriske funktioner | | | | | | | | | | | | | | |
| • พิสัยของผลลัพธ์ของฟังก์ชันตรีโกณเมตริกผกผัน | | | | | | | | | | | | | | |
| • نطاق نتائج الدول المثبتة المعكوسة | | | | | | | | | | | | | | |
| • Kisaran hasil fungsi trigonometri inversi | | | | | | | | | | | | | | |
| • 역삼각함수 결과 범위 | | | | | | | | | | | | | | |
| | <table><tr><td></td><td>θ = sin⁻¹ x, θ = tan⁻¹ x</td><td>θ = cos⁻¹ x</td></tr><tr><td>DEG</td><td>−90 ≤ θ ≤ 90</td><td>0 ≤ θ ≤ 180</td></tr><tr><td>RAD</td><td>−$\frac{\pi}{2}$ ≤ θ ≤ $\frac{\pi}{2}$</td><td>0 ≤ θ ≤ π</td></tr><tr><td>GRAD</td><td>−100 ≤ θ ≤ 100</td><td>0 ≤ θ ≤ 200</td></tr></table> | | θ = sin ⁻¹ x, θ = tan ⁻¹ x | θ = cos ⁻¹ x | DEG | −90 ≤ θ ≤ 90 | 0 ≤ θ ≤ 180 | RAD | − $\frac{\pi}{2}$ ≤ θ ≤ $\frac{\pi}{2}$ | 0 ≤ θ ≤ π | GRAD | −100 ≤ θ ≤ 100 | 0 ≤ θ ≤ 200 | |
| | θ = sin ⁻¹ x, θ = tan ⁻¹ x | θ = cos ⁻¹ x | | | | | | | | | | | | |
| DEG | −90 ≤ θ ≤ 90 | 0 ≤ θ ≤ 180 | | | | | | | | | | | | |
| RAD | − $\frac{\pi}{2}$ ≤ θ ≤ $\frac{\pi}{2}$ | 0 ≤ θ ≤ π | | | | | | | | | | | | |
| GRAD | −100 ≤ θ ≤ 100 | 0 ≤ θ ≤ 200 | | | | | | | | | | | | |
| 7 ∫dx d/dx | | | | | | | | | | | | | | |
| $\int_2^8 (x^2 - 5)dx$ | <div>ON/C∫dx2▲8►</div> <div>ALPHAXX²−5</div> <div>138.</div> | | | | | | | | | | | | | |
| n = 100 | <div>=</div> <div>138.</div> | | | | | | | | | | | | | |
| n = 10 | <div>◀◀(x^y)10=</div> <div>138.</div> | | | | | | | | | | | | | |
| LINE | <div>ON/C∫dxALPHAXX²−5</div> <div>(x^y)2(x^y)8)=</div> <div>138.</div> | | | | | | | | | | | | | |
| | <div>◀◀(x^y)10=</div> <div>138.</div> | | | | | | | | | | | | | |
| $-\int_{-1}^1 (x^2 - 1)dx$ | <div>(−)∫dx(−)1▲1►</div> <div>ALPHAXX²−1►+</div> <div>∫dx1▲3►ALPHAXX²</div> <div>−1=</div> <div>8.</div> | | | | | | | | | | | | | |

| | | |
|---|---|-------------|
| $\frac{d(x^4 - 0.5x^3 + 6x^2)}{dx}$ | 2ndF $\frac{d}{dx}$ ALPHA $\frac{x}{x}$ y^x 4 \blacktriangleright — 0.5 ALPHA $\frac{x}{x}$ 2ndF $\frac{x^3}{x^3}$ + 6 ALPHA $\frac{x}{x}$ $\frac{x^2}{x^2}$ | |
| $\left(\begin{array}{l} x = 2 \\ dx = 0.00002 \end{array} \right.$ | \blacktriangleright 2 = | 50. |
| $\left(\begin{array}{l} x = 3 \\ dx = 0.001 \end{array} \right.$ | \blacktriangleleft \blacktriangleleft BS 3 $\frac{x}{(x,y)}$ 0.001 = | 130.5000029 |
| LINE | 2ndF $\frac{d}{dx}$ ALPHA $\frac{x}{x}$ y^x 4 — 0.5 ALPHA $\frac{x}{x}$ 2ndF $\frac{x^3}{x^3}$ + 6 ALPHA $\frac{x}{x}$ $\frac{x^2}{x^2}$ $\frac{(x,y)}{(x,y)}$ 2) = | 50. |
| | \blacktriangleleft \blacktriangleleft BS 3 $\frac{(x,y)}{(x,y)}$ 0.001 = | 130.5000029 |

| | | |
|----------------------|---|-----|
| 8 Σ | | |
| $\sum_{x=1}^5 (x+2)$ | ON/C 2ndF Σ 1 \blacktriangleright 5 \blacktriangleright ALPHA $\frac{x}{x}$ + 2 | |
| $n = 1$ | = | 25. |
| $n = 2$ | \blacktriangleleft \blacktriangleleft $\frac{x}{(x,y)}$ 2 = | 15. |
| LINE | ON/C 2ndF Σ ALPHA $\frac{x}{x}$ + 2 $\frac{(x,y)}{(x,y)}$ 1 $\frac{(x,y)}{(x,y)}$ 5) = | 25. |
| | \blacktriangleleft \blacktriangleleft $\frac{x}{(x,y)}$ 2 = | 15. |

| | | |
|-------------------------------------|------------------------|-------------------|
| 9 DRG | | |
| $90^\circ \rightarrow [\text{rad}]$ | ON/C 90 2ndF DRG | $\frac{1}{2} \pi$ |
| $\rightarrow [\text{g}]$ | 2ndF DRG | 100. |
| $\rightarrow [^\circ]$ | 2ndF DRG | 90. |
| $\sin^{-1} 0.8 = [^\circ]$ | 2ndF \sin^{-1} 0.8 = | 53.13010235 |
| $\rightarrow [\text{rad}]$ | 2ndF DRG | 0.927295218 |
| $\rightarrow [\text{g}]$ | 2ndF DRG | 59.03344706 |
| $\rightarrow [^\circ]$ | 2ndF DRG | 53.13010235 |

| | | |
|---|---|-------------------------|
| 10 ALPHA RCL STO M+ M- ANS F1 F2 F3 F4 D1 D2 D3 D4 | | |
| $8 \times 2 \Rightarrow \text{M}$ | ON/C 8 \times 2 STO M | 16. |
| $24 \div (8 \times 2) =$ | 24 \div ALPHA M = | $1\frac{1}{2}$ |
| $(8 \times 2) \times 5 =$ | ALPHA M \times 5 = | 80. |
| $0 \Rightarrow \text{M}$ | ON/C STO M | 0. |
| $\$150 \times 3 \Rightarrow \text{M}_1$ | 150 \times 3 M+ | 450. |
| $+) \$250: \text{M}_1 + 250 \Rightarrow \text{M}_2$ | 250 M+ | 250. |
| $-) \text{M}_2 \times 5\%$ | RCL M \times 5 2ndF % 2ndF M- | 35. |
| M = | RCL M | 665. |
| $\$1 = ¥110 (110 \Rightarrow \text{Y})$ | 110 STO Y | 110. |
| $¥26,510 = \$?$ | 26510 \div ALPHA Y = | 241. |
| $\$2,750 = ¥?$ | 2750 \times ALPHA Y = | 302'500. |
| $r = 3 \text{ cm } (r \Rightarrow \text{Y})$ | 3 STO Y | 3. |
| $\pi r^2 = ?$ | 2ndF π ALPHA Y $\frac{x^2}{x^2}$ = CHANGE | 28.27433388 |
| $\frac{24}{4+6} = 2\frac{2}{5} \dots (\text{A})$ | 24 \div (4 + 6) = | $2\frac{2}{5}$ |
| $3 \times (\text{A}) + 60 \div (\text{A}) =$ | 3 \times ALPHA ANS + 60 \div ALPHA ANS = | $32\frac{1}{5}$ |
| $\pi r^2 \Rightarrow \text{F1}$ | 2ndF π ALPHA Y $\frac{x^2}{x^2}$ STO F1 | $\Rightarrow \text{F1}$ |
| $r = 3 \text{ cm } (r \Rightarrow \text{Y})$ | 3 STO Y | 3. |
|  V = ? | RCL F1 \times 4 \div 3 = CHANGE | 37.69911184 |
| $\sinh^{-1} \Rightarrow \text{D1}$ | STO D1 2ndF arc hyp sin | |
| $\sinh^{-1} 0.5 =$ | D1 0.5 = | 0.481211825 |

| | | |
|---------------------------|-----------------------------|------|
| 11 | | |
| $6 + 4 = \text{ANS}$ | ON/C 6 + 4 = | 10. |
| $\text{ANS} + 5 =$ | + 5 = | 15. |
| $8 \times 2 = \text{ANS}$ | 8 \times 2 = | 16. |
| $\text{ANS}^2 =$ | $\frac{x^2}{x^2}$ = | 256. |
| $44 + 37 = \text{ANS}$ | 44 + 37 = | 81. |
| $\sqrt{\text{ANS}} =$ | 2ndF $\sqrt{}$ = | 9. |

| | | |
|--------------------------------|---|-------------------------|
| 12 a/b a/b _c | | |
| $3\frac{1}{2} + \frac{4}{3} =$ | ON/C 3 2ndF a/b _c 1 \blacktriangledown 2 \blacktriangleright + a/b 4 \blacktriangledown 3 = | $4\frac{5}{6}$ |
| | CHANGE | $\frac{29}{6}$ |
| | CHANGE | 4.833333333 |
| LINE | 3 a/b 1 a/b 2 + 4 a/b 3 = | $4\text{r}5\text{r}6^*$ |
| | CHANGE | $29\text{r}6$ |
| | CHANGE | 4.833333333 |

| | | |
|---|---|-------------------------|
| $10\frac{2}{3} =$ | 2ndF 10^x 2 a/b 3 = | 4.641588834 |
| $\left(\frac{7}{5}\right)^5 =$ | 7 a/b 5 \blacktriangleright y^x 5 = | $\frac{16807}{3125}$ |
| LINE | 7 a/b 5 y^x 5 = | $16807\text{r}3125$ |
| $3\sqrt{\frac{1}{8}} =$ | 2ndF $\sqrt[3]{}$ 1 a/b 8 = | $\frac{1}{2}$ |
| $\sqrt{\frac{64}{225}} =$ | 2ndF $\sqrt{}$ 64 a/b 225 = | $\frac{8}{15}$ |
| $\frac{2^3}{3^4} =$ | 2 2ndF $\frac{x^3}{x^3}$ a/b 3 y^x 4 = | $\frac{8}{81}$ |
| LINE | 2 2ndF $\frac{x^3}{x^3}$ a/b (3 y^x 4) = | $8\text{r}81$ |
| $\frac{1.2}{2.3} =$ | 1.2 a/b 2.3 = | $\frac{12}{23}$ |
| $\frac{1^\circ 2' 3''}{2} =$ | 1 D ^{MS} 2 D ^{MS} 3 a/b 2 = | $0^\circ 31' 1.5''$ |
| $\frac{1 \times 10^3}{2 \times 10^3} =$ | 1 Exp 3 a/b 2 Exp 3 = | $\frac{1}{2}$ |
| $7 \Rightarrow \text{A}$ | ON/C 7 STO A | 7. |
| $\frac{4}{\text{A}} =$ | 4 a/b ALPHA A = | $\frac{4}{7}$ |
| $1.25 + \frac{2}{5} =$ | 1.25 + 2 a/b 5 = | $1\frac{13}{20}$ |
| | CHANGE | $\frac{33}{20}$ |
| | CHANGE | 1.65 |
| LINE | 1.25 + 2 a/b 5 = | 1.65 |
| | CHANGE | $1\text{r}13\text{r}20$ |
| | CHANGE | $33\text{r}20$ |

$$* 4\text{r}5\text{r}6 = 4\frac{5}{6}$$

| 13 | ↔BIN | ↔PEN | ↔OCT | ↔HEX | ↔DEC | NEG | NOT | AND |
|------------------------------------|----------------|----------------|------------------|-------------|-------------|------------|------------|----------------------------|
| | OR | XOR | XNOR | | | | | |
| DEC (25) → BIN | ON/C | 2ndF | ↔DEC | 2 5 | | | | |
| | 2ndF | ↔BIN | | | BIN | | | 1 1 0 0 1 |
| HEX (1A C) | 2ndF | ↔HEX | 1 A C | | | | | |
| → BIN | 2ndF | ↔BIN | | | BIN | | | 1 1 0 1 0 1 1 0 0 |
| → PEN | 2ndF | ↔PEN | | | PEN | | | 3 2 0 3 |
| → OCT | 2ndF | ↔OCT | | | OCT | | | 6 5 4 |
| → DEC | 2ndF | ↔DEC | | | | | | 4 2 8. |
| (1010 – 100) × 11 = [BIN] | 2ndF | ↔BIN | (| | | | | |
| | | | 1 0 1 0 | — | | | | |
| | | | 1 0 0 |) | × | 1 1 | | |
| | | | = | | BIN | | | 1 0 0 1 0 |
| BIN (111)→NEG | NEG | 1 1 1 | = | | BIN | | | 1 1 1 1 1 1 1 0 0 1 |
| HEX (1FF) + OCT (512) = | 2ndF | ↔HEX | 1 F F | | | | | |
| | 2ndF | ↔OCT | + | | | | | |
| | | | 5 1 2 | = | OCT | | | 1 5 1 1 |
| HEX (?) | 2ndF | ↔HEX | | | HEX | | | 3 4 9 |
| 2FEC – 2C9E ⇒ M ₁ | ON/C | STO | M | | | | | |
| | 2ndF | ↔HEX | 2 F E C | | | | | |
| | — | 2 C 9 E | M+ | | HEX | | | 3 4 E |
| +) 2000 – 1901 ⇒ M ₂ | 2 0 0 0 | — | 1 9 0 1 | | | | | |
| | M+ | | | | HEX | | | 6 F F |
| M = | RCL | M | | | HEX | | | A 4 D |
| | ON/C | STO | M | | | | | |
| 1011 AND 101 = [BIN] | 2ndF | ↔BIN | 1 0 1 1 | | | | | |
| | AND | 1 0 1 | = | | BIN | | | 1 |
| 5A OR C3 = [HEX] | 2ndF | ↔HEX | 5 A | OR | | | | |
| | C 3 | = | | | HEX | | | D B |
| NOT 10110 = [BIN] | 2ndF | ↔BIN | NOT | | | | | |
| | | | 1 0 1 1 0 | = | BIN | | | 1 1 1 1 1 0 1 0 0 1 |
| 24 XOR 4 = [OCT] | 2ndF | ↔OCT | 2 4 | XOR | | | | |
| | 4 | = | | | OCT | | | 2 0 |
| B3 XNOR 2D = [HEX] | 2ndF | ↔HEX | B 3 | XNOR | | | | |
| | 2 D | = | | | HEX | | | F F F F F F F F 6 1 |
| → DEC | 2ndF | ↔DEC | | | | | | -1 5 9. |

| | | |
|-------------------------------------|---------------|------------------------|
| 14 | D°M'S | ↔°DEG |
| 7°31'49.44" → [10] | | |
| ON/C | 7 | D°M'S |
| 49.44 | 2ndF | ↔°DEG |
| | | 7 |
| | | 663 |
| | | 1250 |
| 123.678 → [60] | | |
| 123.678 | 2ndF | ↔°DEG |
| | | 123 ° 40' 40.8" |
| 3h 30m 45s + 6h 45m 36s = [60] | | |
| 3 | D°M'S | 30 |
| + | 6 | D°M'S |
| 36 | = | |
| | | 10 ° 16' 21." |
| 1234°56'12" + 0°0'34.567" = [60] | | |
| 1234 | D°M'S | 56 |
| 12 | + | 0 |
| D°M'S | 34.567 | = |
| | | 1234 ° 56' 47." |
| 3h 45m – 1.69h = [60] | | |
| 3 | D°M'S | 45 |
| — | 1.69 | = |
| 2ndF | ↔°DEG | |
| | | 2 ° 3' 36." |
| sin 62°12'24" = [10] | | |
| sin | 62 | D°M'S |
| 24 | = | |
| | | 0.884635235 |
| 24° → ["] | | |
| 24 | D°M'S | MATH |
| | 4 | |
| | | 86' 400. |
| 1500" → ['] | | |
| 0 | D°M'S | 0 |
| D°M'S | 1500 | |
| MATH | 5 | |
| | | 25. |

| 15 | →r°θ | →x°y | ^r (x,y) |
|---|-------------|-------------------------|-------------------------------|
| $\begin{pmatrix} x = 6 \\ y = 4 \end{pmatrix} \rightarrow \begin{pmatrix} r = \\ \theta = [^\circ] \end{pmatrix}$ | ON/C | 6 | ^(x,y) |
| | 2ndF | →r°θ | |
| $\begin{pmatrix} r = 14 \\ \theta = 36 [^\circ] \end{pmatrix} \rightarrow \begin{pmatrix} x = \\ y = \end{pmatrix}$ | 1 4 | ^(x,y) | 3 6 |
| | 2ndF | →x°y | |
| | | | X: 1 1.3 2 6 2 3 7 9 2 |
| | | | Y: 8.2 2 8 9 9 3 5 3 2 |

| | | | | | |
|---|---------------|---------------|-----------------------|-------------|-----------------|
| 16 | CNST | CONV | | | |
| V ₀ = 15.3 m/s | ON/C | 15.3 | × | 10 | + |
| t = 10 s | 2 | (2ndF) | X⁻¹ | × | CNST |
| | | | | | 03 |
| Vot + $\frac{1}{2}$ gt ² = ? m | × | 10 | X² | = | |
| | CHANGE | | | | 643.3325 |
| 125 yd = ? m | ON/C | 125 | (2ndF) | CONV | 05 |
| | CHANGE | CHANGE | | | = |
| | | | | | 114.3 |

- Physical constants and metric conversions are shown in the tables.
- Les constantes physiques et les conversions des unités sont indiquées sur les tableaux.
- Physikalische Konstanten und metrische Umrechnungen sind in der Tabelle aufgelistet.
- Las constants físicas y conversiones métricas son mostradas en las tables.
- Constantes físicas e conversões métricas estão mostradas nas tabelas.
- La constanti fisiche e le conversioni delle unità di misura vengono mostrate nella tabella.
- De natuurconstanten en metrische omrekeningen staan in de tabellen hiernaast.
- A fizikai konstansok és a metrikus átváltások a táblázatokban találhatók.
- Fyzikální konstanty a převody do metrické soustavy jsou uvedeny v tabulce.
- Fysikaliska konstanter och metriska omvandlingar visas i tabellerna.
- Fysikaaliset vakiot ja metrimuunnokset näkyvät taulukoista.
- Fysiske konstanter og metriske omskrivninger vises i tabellen.
- ค่าคงที่ทางฟิสิกส์และการแปลงหน่วยเมตริกแสดงไว้ในตาราง
- الثوابت الفيزيائية والجداول المترية مبينة في الجداول
- Konstanta fizika dan konversi metrik diperlihatkan di dalam tabel.
- 사용 가능한 물리 상수 및 단위 환산 방법은 다음 표와 같습니다.

| | | |
|---|--|---|
| 01: <i>c</i> , <i>c</i> ₀ (m s ^{−1}) | 19: μ _{<i>B</i>} (J T ^{−1}) | 37: <i>eV</i> (J) |
| 02: <i>G</i> (m³ kg ^{−1} s ^{−2}) | 20: μ _{<i>e</i>} (J T ^{−1}) | 38: <i>t</i> (K) |
| 03: <i>g</i> _{<i>N</i>} (m s ^{−2}) | 21: μ _{<i>N</i>} (J T ^{−1}) | 39: <i>AU</i> (m) |
| 04: <i>m_e</i> (kg) | 22: μ _{<i>p</i>} (J T ^{−1}) | 40: <i>pc</i> (m) |
| 05: <i>m_p</i> (kg) | 23: μ _{<i>n</i>} (J T ^{−1}) | 41: <i>M</i> (¹² C) (kg mol ^{−1}) |
| 06: <i>m_n</i> (kg) | 24: μ _{<i>u</i>} (J T ^{−1}) | 42: ħ (J s) |
| 07: <i>m_u</i> (kg) | 25: λ _{<i>c</i>} (m) | 43: <i>E_h</i> (J) |
| 08: 1 <i>u</i> (kg) | 26: λ _{<i>c,p</i>} (m) | 44: <i>G</i> ₀ (s) |
| 09: <i>e</i> (C) | 27: σ (W m ^{−2} K ^{−4}) | 45: α ^{−1} |
| 10: <i>h</i> (J s) | 28: <i>N_A</i> , <i>L</i> (mol ^{−1}) | 46: <i>m_p</i> / <i>m_e</i> |
| 11: <i>k</i> (J K ^{−1}) | 29: <i>V_m</i> (m³ mol ^{−1}) | 47: <i>M_u</i> (kg mol ^{−1}) |
| 12: μ ₀ (NA ^{−2}) | 30: <i>R</i> (J mol ^{−1} K ^{−1}) | 48: λ _{<i>c,n</i>} (m) |
| 13: ε ₀ (F m ^{−1}) | 31: <i>F</i> (C mol ^{−1}) | 49: <i>c</i> ₁ (W m²) |
| 14: <i>r_e</i> (m) | 32: <i>R_K</i> (Ω) | 50: <i>c</i> ₂ (m K) |
| 15: α | 33: <i>−e</i> / <i>m_e</i> (C kg ^{−1}) | 51: <i>Z</i> ₀ (Ω) |
| 16: <i>a</i> ₀ (m) | 34: ħ/2 <i>m_e</i> (m² s ^{−1}) | 52: atm (Pa) |
| 17: <i>R</i> _∞ (m ^{−1}) | 35: γ _{<i>p</i>} (s ^{−1} T ^{−1}) | |
| 18: Φ ₀ (Wb) | 36: <i>K_J</i> (Hz V ^{−1}) | |

| | | |
|--|--------------------------|--------------------------|
| <i>x</i> 2ndF CONV 01–44 | | |
| 01: in→cm | 16: kg→lb | 31: cal _{IT} →J |
| 02: cm→in | 17: °F→°C | 32: J→cal _{IT} |
| 03: ft→m | 18: °C→°F | 33: hp→W |
| 04: m→ft | 19: gal (US)→L | 34: W→hp |
| 05: yd→m | 20: L→gal (US) | 35: ps→W |
| 06: m→yd | 21: gal (UK)→L | 36: W→ps |
| 07: mi→km | 22: L→gal (UK) | 37: kgf/cm²→Pa |
| 08: km→mi | 23: fl oz(US)→mL | 38: Pa→kgf/cm² |
| 09: n mi→m | 24: mL→fl oz(US) | 39: atm→Pa |
| 10: m→n mi | 25: fl oz(UK)→mL | 40: Pa→atm |
| 11: acre→m² | 26: mL→fl oz(UK) | 41: mmHg→Pa |
| 12: m²→acre | 27: cal _{th} →J | 42: Pa→mmHg |
| 13: oz→g | 28: J→cal _{th} | 43: kgf·m→N·m |
| 14: g→oz | 29: cal ₁₅ →J | 44: N·m→kgf·m |
| 15: lb→kg | 30: J→cal ₁₅ | |

| 17 | MATH | (ENG) |
|------------------|--------------|-----------------|
| 100 m × 10 k = ? | 1 0 0 | MATH |
| | 3 | 4 |
| | × | |
| | 1 0 | MATH |
| | 3 | 0 |
| | = | |
| | | 1'0 0 0. |

| 18 | MDF | SETUP | | | | | |
|------------------|--------|--------|-------|---|---|---|----------------|
| → [FIX, TAB = 1] | ON/C | 2ndF | SETUP | 1 | 0 | 1 | 0.0 |
| 5 ÷ 9 = ANS | 5 | ÷ | 9 | = | | | $\frac{5}{9}$ |
| | CHANGE | | | | | | 0.6 |
| ANS × 9 = | × | 9 | = | * | 1 | | 5.0 |
| | 5 | ÷ | 9 | = | | | $\frac{5}{9}$ |
| | CHANGE | | | | | | 0.6 |
| → [MDF] | 2ndF | MDF | | | | | $\frac{3}{5}$ |
| ANS × 9 = | × | 9 | = | * | 2 | | $5\frac{2}{5}$ |
| | CHANGE | CHANGE | | | | | 5.4 |
| → [NORM1] | 2ndF | SETUP | 1 | 3 | | | 5.4 |

| | |
|-----------|--|
| *1 | $\frac{5}{9} \times 9 = 5.5555555555555 \times 10^{-1} \times 9$ |
| *2 | $\frac{3}{5} \times 9 = 0.6 \times 9$ |

| | | | | | | |
|-------------------------|--------------|------------------------------------|-----------------------------------|---------------------------------|-------------------------------|-----------------------------------|
| 19 | MATH | (ALGB) | | | | |
| $f(x) = x^3 - 3x^2 + 2$ | ON/C | ALPHA | x^{\square} | 2ndF | x^2 | |
| | — | 3 | ALPHA | x^{\square} | + | 2 |
| $x = -1$ | MATH | 1 | (\rightarrow) | 1 | ENTER | -2. |
| $x = -0.5$ | MATH | 1 | (\rightarrow) | 0.5 | ENTER | 1 $\frac{1}{8}$ |
| $\sqrt{A^2 + B^2}$ | 2ndF | $\sqrt{\square}$ | ALPHA | A | x^2 | |
| | + | ALPHA | B | x^2 | | |
| A = 2, B = 3 | MATH | 1 | | | | |
| | 2 | ENTER | 3 | ENTER | $\sqrt{13}$ | |
| A = 2, B = 5 | MATH | 1 | | | | |
| | ENTER | 5 | ENTER | | $\sqrt{29}$ | |

| 20 | MATH | (SOLVER) |
|----------------|-----------------------|-------------------|
| $\sin x - 0.5$ | ON/C | sin ALPHA X — 0.5 |
| Start = 0 | MATH 2 0 ENTER ENTER | 30. |
| Start = 180 | ENTER 180 ENTER ENTER | 150. |

| | | | | | | | | | |
|------|--------------------|------------------|------------|------------------|------------------|--------------------|-------------|--------------|-------------|
| 21 | DATA | (x,y) | \bar{x} | sX | $\bar{\sigma}_x$ | n | ΣX | ΣX^2 | \bar{y} |
| | sY | $\bar{\sigma}_y$ | ΣY | ΣY^2 | ΣXY | r | a | b | c |
| | X' | Y' | | | | | | | |
| | | | MODE | 1 | 0 | Stat | 0 | [SD] | |
| | | | 2ndF | CA | | | | | 0. |
| DATA | 95 | | 95 | DATA | | DATA | SET= | | 1. |
| | 80 | | 80 | DATA | | DATA | SET= | | 2. |
| | 80 | | | DATA | | DATA | SET= | | 3. |
| | 75 | | 75 | (x,y) | 3 | DATA | DATA | SET= | 4. |
| | 75 | | 50 | DATA | | DATA | SET= | | 5. |
| | 50 | | | | | | | | |
| | \bar{x} = | | RCL | \bar{x} | | \bar{x} = | 75.71428571 | | |
| | $\bar{\sigma}_x$ = | | RCL | $\bar{\sigma}_x$ | | $\bar{\sigma}_x$ = | 12.37179148 | | |
| | n = | | RCL | n | | n = | 7. | | |
| | ΣX = | | RCL | ΣX | | ΣX = | 530. | | |
| | ΣX^2 = | | RCL | ΣX^2 | | ΣX^2 = | 41'200. | | |
| | sX = | | RCL | sX | | sX = | 13.3630621 | | |
| | sX^2 = | | X^2 | = | | sX^2 = | 178.5714286 | | |
| | | | (| 95 | — | | | | |
| | | | ALPHA | \bar{x} |) | | | | |
| | | | ÷ | ALPHA | sX | | | | |
| | | | × | 10 | + | 50 | | | |
| | | | = | | | | | | |
| | | | | | | | | | 64.43210706 |

$$\frac{(95 - \bar{x})}{sX} \times 10 + 50 =$$

DATA

| x | y |
|----|----|
| 2 | 5 |
| 2 | 5 |
| 12 | 24 |
| 21 | 40 |
| 21 | 40 |
| 15 | 25 |

MODE 1 1

2ndF CA

Stat 1 [LINE]

0.

2 (x,y) 5 DATA

DATA SET= 1.

DATA

DATA SET= 2.

12 (x,y) 24 DATA

DATA SET= 3.

21 (x,y) 40 (x,y) 3 DATA

DATA SET= 4.

15 (x,y) 25 DATA

DATA SET= 5.

a= RCL a

a= 1.050261097

b= RCL b

b= 1.826044386

r= RCL r

r= 0.995176343

sx= RCL sx

sx= 8.541216597

sy= RCL sy

sy= 15.67223812

x=3 → y'=? 3 2ndF y'

3y' 6.528394256

y=46 → x'=? 46 2ndF x'

46x' 24.61590706

DATA

| x | y |
|----|-----|
| 12 | 41 |
| 8 | 13 |
| 5 | 2 |
| 23 | 200 |
| 15 | 71 |

MODE 1 2

2ndF CA

Stat 2 [QUAD]

0.

12 (x,y) 41 DATA

DATA SET= 1.

8 (x,y) 13 DATA

DATA SET= 2.

5 (x,y) 2 DATA

DATA SET= 3.

23 (x,y) 200 DATA

DATA SET= 4.

15 (x,y) 71 DATA

DATA SET= 5.

a= RCL a

a= 5.357506761

b= RCL b

b= -3.120289663

c= RCL c

c= 0.503334057

x=10 → y'=? 10 2ndF y'

10y' 24.4880159

y=22 → x'=? 22 2ndF x'

22x' 9.63201409

1: -3.432772026

2:

22 DATA (x,y) ▲ ▼ CD

MODE 1 0

2ndF CA

Stat 0 [SD]

0.

DATA

| |
|----|
| 20 |
| 30 |
| 40 |
| 40 |
| 50 |

20 DATA

DATA SET= 1.

30 DATA

DATA SET= 2.

40 (x,y) 2 DATA

DATA SET= 3.

50 DATA

DATA SET= 4.

↓

DATA

| |
|----|
| 30 |
| 45 |
| 45 |
| 45 |
| 60 |

▼ 2ndF CD

DATA SET= 3.

▼ ▼ ▼ 45 DATA

X: 45.

3 DATA

F: 3.

▼ 60 DATA

X: 60.

ON/C

23

$\bar{x} = \frac{\sum x}{n}$
 $\sigma x = \sqrt{\frac{\sum x^2 - n\bar{x}^2}{n}}$
 $\sum x^2 = x_1^2 + x_2^2 + \dots + x_n^2$
 $\bar{y} = \frac{\sum y}{n}$
 $\sigma y = \sqrt{\frac{\sum y^2 - n\bar{y}^2}{n}}$
 $\sum xy = x_1y_1 + x_2y_2 + \dots + x_ny_n$
 $\sum y = y_1 + y_2 + \dots + y_n$
 $\sum y^2 = y_1^2 + y_2^2 + \dots + y_n^2$

24 MATH (-t, P, Q, R)

$P(t) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^t e^{-\frac{x^2}{2}} dx$
 $Q(t) = \frac{1}{\sqrt{2\pi}} \int_0^t e^{-\frac{x^2}{2}} dx$
 $R(t) = \frac{1}{\sqrt{2\pi}} \int_t^{\infty} e^{-\frac{x^2}{2}} dx$

(t ≥ 0)

(t < 0)

DATA

| x | F |
|----|----|
| 20 | 1 |
| 30 | 3 |
| 40 | 5 |
| 50 | 8 |
| 60 | 13 |
| 70 | 10 |
| 80 | 7 |
| 90 | 3 |

MODE 1 0

2ndF CA

Stat 0 [SD]

0.

20 (x,y) 1 DATA

DATA SET= 1.

30 (x,y) 3 DATA

DATA SET= 2.

40 (x,y) 5 DATA

DATA SET= 3.

50 (x,y) 8 DATA

DATA SET= 4.

60 (x,y) 13 DATA

DATA SET= 5.

70 (x,y) 10 DATA

DATA SET= 6.

80 (x,y) 7 DATA

DATA SET= 7.

90 (x,y) 3 DATA

DATA SET= 8.

x̄= RCL x̄

x̄= 60.4

σx= RCL σx

σx= 16.48757108

x=35 → P(t)? MATH 2 35 MATH 1

= 0.061713

x=75 → Q(t)? MATH 3 75 MATH 1

= 0.312061

x=85 → R(t)? MATH 4 85 MATH 1

= 0.067845

t=1.5 → R(t)? MATH 4 1.5) =

0.066807

25 MODE (CPLX)

$(12 - 6i) + (7 + 15i) - (11 + 4i) = 8. + 5.i$
 $6 \times (7 - 9i) \times (-5 + 8i) = 222. + 606.i$
 $16 \times (\sin 30^\circ + i \cos 30^\circ) \div (\sin 60^\circ + i \cos 60^\circ) = 13.85640646 + 8.i$

2ndF →rθ 8 ∠ 70 + 12 ∠ 25 =

18.5408873

42.76427608

r1 = 8, θ1 = 70°

r2 = 12, θ2 = 25°

→ r = ?, θ = ?°

1 + i

→ r = ?, θ = ?°

2ndF →xy 1 + i =

1. + 1.i

2ndF →rθ

1.414213562

44.5.

(2 - 3i)² =

2ndF →xy (2 - 3 i) =

-5. -12.i

1 / (1 + i) =

(1 + i) 2ndF X⁻¹ =

0.5 -0.5i

CONJ(5 + 2i) =

MATH 1 (5 + 2 i) =

5. -2.i

| 26 | MODE (MATRIX) |
|--|--|
| $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} \Rightarrow \text{matA}$ | <div> <div>MODE</div> <div>4</div> <div>MATH</div> <div>2</div> <div>2</div> <div>2</div> <div>ENTER</div> <div>1</div> <div>ENTER</div> <div>2</div> <div>ENTER</div> <div>3</div> <div>ENTER</div> <div>4</div> <div>ENTER</div> <div>ON/C</div> <div>MATH</div> <div>4</div> <div>0</div> </div> |
| $\begin{bmatrix} 3 & 1 \\ 2 & 6 \end{bmatrix} \Rightarrow \text{matB}$ | <div> <div>MATH</div> <div>2</div> <div>ENTER</div> <div>3</div> <div>ENTER</div> <div>1</div> <div>ENTER</div> <div>2</div> <div>ENTER</div> <div>6</div> <div>ENTER</div> <div>ON/C</div> <div>MATH</div> <div>4</div> <div>1</div> </div> |
| $\text{matA} \times \text{matB} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>1</div> <div>1</div> <div>0</div> <div>\times</div> <div>7</div> <div>13</div> <div>MATH</div> <div>1</div> <div>1</div> <div>=</div> <div>17</div> <div>27</div> </div> |
| $\text{matA}^{-1} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>1</div> <div>0</div> <div>2ndF</div> <div>x^{-1}</div> <div>=</div> <div>-2</div> <div>1</div> <div>1.5</div> <div>-0.5</div> </div> |
| $\text{dim}(\text{matA}, 3, 3) =$ | <div> <div>ON/C</div> <div>MATH</div> <div>5</div> <div>0</div> <div>MATH</div> <div>1</div> <div>0</div> <div>(x,y)</div> <div>3</div> <div>)</div> <div>=</div> <div>1</div> <div>2</div> <div>0</div> <div>3</div> <div>4</div> <div>0</div> <div>0</div> <div>0</div> <div>0</div> </div> |
| $\text{fill}(5, 3, 3) =$ | <div> <div>ON/C</div> <div>MATH</div> <div>5</div> <div>1</div> <div>5</div> <div>(x,y)</div> <div>3</div> <div>(x,y)</div> <div>3</div> <div>)</div> <div>=</div> <div>5</div> <div>5</div> <div>5</div> <div>5</div> <div>5</div> <div>5</div> </div> |
| $\text{cumul matA} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>5</div> <div>2</div> <div>MATH</div> <div>1</div> <div>0</div> <div>=</div> <div>1</div> <div>2</div> <div>4</div> <div>6</div> </div> |
| $\text{aug}(\text{matA}, \text{matB}) =$ | <div> <div>ON/C</div> <div>MATH</div> <div>5</div> <div>3</div> <div>MATH</div> <div>1</div> <div>0</div> <div>(x,y)</div> <div>MATH</div> <div>1</div> <div>1</div> <div>)</div> <div>=</div> <div>1</div> <div>2</div> <div>3</div> <div>1</div> <div>3</div> <div>4</div> <div>2</div> <div>6</div> </div> |
| $\text{identity } 3 =$ | <div> <div>ON/C</div> <div>MATH</div> <div>5</div> <div>4</div> <div>3</div> <div>=</div> <div>1</div> <div>0</div> <div>0</div> <div>0</div> <div>1</div> <div>0</div> <div>0</div> <div>1</div> </div> |
| $\text{rnd_mat}(2, 3) =$ | <div> <div>ON/C</div> <div>MATH</div> <div>5</div> <div>5</div> <div>2</div> <div>(x,y)</div> <div>3</div> <div>)</div> <div>=</div> </div> |
| $\text{det matA} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>6</div> <div>0</div> <div>MATH</div> <div>1</div> <div>0</div> <div>=</div> <div>-2.</div> </div> |
| $\text{trans matB} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>6</div> <div>1</div> <div>MATH</div> <div>1</div> <div>1</div> <div>=</div> <div>3</div> <div>2</div> <div>1</div> <div>6</div> </div> |
| $\text{mat} \rightarrow \text{list}$ | <div> <div>ON/C</div> <div>MATH</div> <div>7</div> <div>MATH</div> <div>3</div> <div>0</div> <div>ON/C</div> <div>MATH</div> <div>3</div> <div>1</div> <div>1: 1</div> <div>2: 3</div> <div>1: 3</div> <div>2: 2</div> </div> |

| 27 | MODE (LIST) |
|--|---|
| $\{2, 7, 4\} \Rightarrow \text{L1}$ | <div> <div>MODE</div> <div>5</div> <div>MATH</div> <div>2</div> <div>3</div> <div>ENTER</div> <div>2</div> <div>ENTER</div> <div>7</div> <div>ENTER</div> <div>4</div> <div>ENTER</div> <div>ON/C</div> <div>MATH</div> <div>4</div> <div>0</div> </div> |
| $\{-3, -1, -4\} \Rightarrow \text{L2}$ | <div> <div>MATH</div> <div>2</div> <div>ENTER</div> <div>(\leftarrow)</div> <div>3</div> <div>ENTER</div> <div>(\leftarrow)</div> <div>1</div> <div>ENTER</div> <div>(\leftarrow)</div> <div>4</div> <div>ENTER</div> <div>ON/C</div> <div>MATH</div> <div>4</div> <div>1</div> </div> |
| $\text{L1} + \text{L2} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>1</div> <div>0</div> <div>$+$</div> <div>1: -1</div> <div>2: 6</div> <div>MATH</div> <div>1</div> <div>1</div> <div>=</div> <div>3: 0</div> </div> |
| $\text{sortA L1} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>5</div> <div>0</div> <div>MATH</div> <div>1</div> <div>0</div> <div>=</div> <div>1: 2</div> <div>2: 4</div> <div>3: 7</div> </div> |
| $\text{sortD L1} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>5</div> <div>1</div> <div>MATH</div> <div>1</div> <div>0</div> <div>=</div> <div>1: 7</div> <div>2: 4</div> <div>3: 2</div> </div> |
| $\text{dim}(\text{L1}, 5) =$ | <div> <div>ON/C</div> <div>MATH</div> <div>5</div> <div>2</div> <div>MATH</div> <div>1</div> <div>0</div> <div>(x,y)</div> <div>5</div> <div>)</div> <div>=</div> <div>1: 2</div> <div>2: 7</div> <div>3: 4</div> <div>4: 0</div> <div>5: 0</div> </div> |
| $\text{fill}(5, 5) =$ | <div> <div>ON/C</div> <div>MATH</div> <div>5</div> <div>3</div> <div>5</div> <div>(x,y)</div> <div>5</div> <div>)</div> <div>=</div> <div>1: 5</div> <div>2: 5</div> <div>3: 5</div> <div>4: 5</div> <div>5: 5</div> </div> |
| $\text{cumul L1} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>5</div> <div>4</div> <div>MATH</div> <div>1</div> <div>0</div> <div>=</div> <div>1: 2</div> <div>2: 9</div> <div>3: 13</div> </div> |
| $\text{df_list L1} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>5</div> <div>5</div> <div>MATH</div> <div>1</div> <div>0</div> <div>=</div> <div>1: 5</div> <div>2: -3</div> </div> |
| $\text{aug}(\text{L1}, \text{L2}) =$ | <div> <div>ON/C</div> <div>MATH</div> <div>5</div> <div>6</div> <div>MATH</div> <div>1</div> <div>0</div> <div>(x,y)</div> <div>MATH</div> <div>7</div> <div>(x,y)</div> <div>MATH</div> <div>1</div> <div>)</div> <div>=</div> <div>1: 2</div> <div>2: 7</div> <div>3: 4</div> <div>4: -3</div> <div>5: -1</div> <div>6: -4</div> </div> |
| $\text{min L1} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>6</div> <div>0</div> <div>MATH</div> <div>1</div> <div>0</div> <div>=</div> <div>2.</div> </div> |
| $\text{max L1} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>6</div> <div>1</div> <div>MATH</div> <div>1</div> <div>0</div> <div>=</div> <div>7.</div> </div> |
| $\text{mean L1} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>6</div> <div>2</div> <div>MATH</div> <div>1</div> <div>0</div> <div>=</div> <div>4.333333333</div> </div> |
| $\text{med L1} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>6</div> <div>3</div> <div>MATH</div> <div>1</div> <div>0</div> <div>=</div> <div>4.</div> </div> |
| $\text{sum L1} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>6</div> <div>4</div> <div>MATH</div> <div>1</div> <div>0</div> <div>=</div> <div>13.</div> </div> |
| $\text{prod L1} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>6</div> <div>5</div> <div>MATH</div> <div>1</div> <div>0</div> <div>=</div> <div>56.</div> </div> |
| $\text{stdDv L1} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>6</div> <div>6</div> <div>MATH</div> <div>1</div> <div>0</div> <div>=</div> <div>2.516611478</div> </div> |
| $\text{vari L1} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>6</div> <div>7</div> <div>MATH</div> <div>1</div> <div>0</div> <div>=</div> <div>6.333333333</div> </div> |

| | |
|--|--|
| $\text{o_prod}(\text{L1}, \text{L2}) =$ | <div> <div>ON/C</div> <div>MATH</div> <div>6</div> <div>8</div> <div>MATH</div> <div>1</div> <div>0</div> <div>(x,y)</div> <div>MATH</div> <div>1</div> <div>1</div> <div>)</div> <div>=</div> <div>1: -24</div> <div>2: -4</div> <div>3: 19</div> </div> |
| $\text{i_prod}(\text{L1}, \text{L2}) =$ | <div> <div>ON/C</div> <div>MATH</div> <div>6</div> <div>9</div> <div>MATH</div> <div>1</div> <div>0</div> <div>(x,y)</div> <div>MATH</div> <div>1</div> <div>1</div> <div>)</div> <div>=</div> <div>-29.</div> </div> |
| $\text{abs_list L2} =$ | <div> <div>ON/C</div> <div>MATH</div> <div>6</div> <div>A</div> <div>MATH</div> <div>1</div> <div>1</div> <div>=</div> <div>5.099019514</div> </div> |
| $\text{list} \rightarrow \text{matA}$ | <div> <div>ON/C</div> <div>MATH</div> <div>8</div> <div>MATH</div> <div>3</div> <div>0</div> <div>2</div> <div>-3</div> <div>7</div> <div>-1</div> <div>4</div> <div>-4</div> </div> |

| 28 | MODE (2-VLE, 3-VLE, QUAD, CUBIC) |
|---|---|
| $\begin{cases} 2x + 3y = 4 \\ 5x + 6y = 7 \end{cases}$ | <div> <div>MODE</div> <div>6</div> <div>0</div> <div>2</div> <div>ENTER</div> <div>3</div> <div>ENTER</div> <div>4</div> <div>ENTER</div> <div>5</div> <div>ENTER</div> <div>6</div> <div>ENTER</div> <div>7</div> </div> |
| $\begin{matrix} x = ? \\ y = ? \\ \text{det(D)} = ? \end{matrix}$ | <div> <div>ENTER</div> <div>X:</div> <div>-1.</div> <div>Y:</div> <div>2.</div> <div>D:</div> <div>-3.</div> </div> |
| $\begin{cases} x + y - z = 9 \\ 6x + 6y - z = 17 \\ 14x - 7y + 2z = 42 \end{cases}$ | <div> <div>MODE</div> <div>6</div> <div>1</div> <div>1</div> <div>ENTER</div> <div>1</div> <div>ENTER</div> <div>(\leftarrow)</div> <div>1</div> <div>ENTER</div> <div>9</div> <div>ENTER</div> <div>6</div> <div>ENTER</div> <div>6</div> <div>ENTER</div> <div>(\leftarrow)</div> <div>1</div> <div>ENTER</div> <div>17</div> <div>ENTER</div> <div>14</div> <div>ENTER</div> <div>(\leftarrow)</div> <div>7</div> <div>ENTER</div> <div>2</div> <div>ENTER</div> <div>42</div> </div> |
| $\begin{matrix} x = ? \\ y = ? \\ z = ? \\ \text{det(D)} = ? \end{matrix}$ | <div> <div>ENTER</div> <div>X:</div> <div>3.238095238</div> <div>Y:</div> <div>-1.638095238</div> <div>Z:</div> <div>-7.4</div> <div>D:</div> <div>105.</div> </div> |
| $3x^2 + 4x - 95 = 0$ | <div> <div>MODE</div> <div>6</div> <div>2</div> <div>3</div> <div>ENTER</div> <div>4</div> <div>ENTER</div> <div>(\leftarrow)</div> <div>95</div> </div> |
| $x = ?$ | <div> <div>ENTER</div> <div>X=</div> <div>1:</div> <div>5.</div> <div>2:</div> <div>-6.333333333</div> </div> |
| $5x^3 + 4x^2 + 3x + 7 = 0$ | <div> <div>MODE</div> <div>6</div> <div>3</div> <div>5</div> <div>ENTER</div> <div>4</div> <div>ENTER</div> <div>3</div> <div>ENTER</div> <div>7</div> </div> |
| $x = ?$ | <div> <div>ENTER</div> <div>X=</div> <div>1:</div> <div>-1.233600307</div> <div>2:</div> <div>0.216800153</div> <div>$\pm 1.043018296i$</div> </div> |

| 29 | | |
|--|---|--|
| Function keys Touches de fonction Funktionstasten Teclas de función Teclas de função Tasti di funzione Functietoetsen Függvénybillentyűk Tlačítka funkcí Funktionstangenten Funktionäppäimet Funktionstaster ปุ่มฟังก์ชัน مفاتيح الوظائف Tombol fungsi 함수 키 | Display Affichage Anzeige Visualizador Exibição Display Display Kijelző Zobrazení Visning Näyttö Display การแสดงผล الشاشة Tampilan 화면 표시 | Buffer space* Espace tampon* Speicherplatz* Espacio de memoria intermedia* Espaço na memória intermediária* Memoria tampone* Bufferruimte* Pufferterület* Výrovnávací paměť* Bufferutrymme* Puskuritila* Bufferplads* จำนวนบัฟเฟอร์* حيز تخزين مؤقت* Ruang buffer* 버퍼 공간* |
| 2ndF x^{-1} | \square^{-1} | 1 |
| x^2 | \square^2 | 1 |
| 2ndF x^3 | \square^3 | 1 |
| y^x | $\square\square$ | 5 |
| 2ndF $\log_{10}x$ | $\log\square(\square)$ | 7 |
| 2ndF e^x | $e\square$ | 5 |
| 2ndF 10^x | $10\square$ | 5 |
| 2ndF $\sqrt{}$ | $\sqrt{\square}$ | 5 |
| 2ndF $\sqrt[3]{}$ | $\sqrt[3]{\square}$ | 5 |
| 2ndF $\sqrt[n]{}$ | $\square\sqrt{\square}$ | 7 |
| a/b / 2ndF $\frac{a}{b/c}$ | $\frac{\square}{\square}$ | 7 |
| 2ndF abs | $ \square $ | 5 |
| $\int dx$ | $\int\square\square dx$ | 9 |
| 2ndF d/dx | $\frac{d(\square)}{dx} \Big _{x=\square}$ | 7 |
| 2ndF Σ | $\sum_{x=\square}(\square)$ | 9 |
| () | () | 4 |

* The amount of memory used for the display in the WriteView editor, measured in characters (excluding entered values, denoted in the chart by “□”).

* Espace mémoire utilisé pour préserver l’affichage dans l’éditeur WriteView, mesuré en caractère (à l’exception des valeurs d’entrée, indiquées dans le tableau par “□”).

* Der für die Anzeige im WriteView Editor verwendete Speicherplatz, gemessen in Zeichen (ohne die eingegebenen Werte, die in der Tabelle mit „□“ markiert sind).

* La cantidad de memoria usada para visualizar en el editor WriteView, medida en caracteres (excluyendo los valores introducidos, indicados en el grafico mediante “□”).

* A quantidade de memória que é usada para a exibição no editor WriteView, medida em caracteres (excluindo os valores introduzidos, indicados no quadro por “□”).

* La quantità di memoria utilizzata per la visualizzazione nell’editor WriteView, misurata in caratteri (escludendo i valori inseriti, indicati nella tabella con il simbolo “□”).

* De hoeveelheid geheugen dat wordt gebruikt om de WriteView editor weer te geven, gemeten in symbolen (met uitzondering van ingevoerde waarden aangeduid in de grafiek met “□”).

* A WriteView szerkesztő megjelenítési műveleteire használatos memóriaterület, karakterben kifejezve (az ábrán „□” karakterrel jelölt beviteli értékeket nem számítva).

* Množství paměti využívané pro účely zobrazení v editoru WriteView, vyjádřené počtem znaků (vyjma zadaných hodnot, označených v grafu znakem „□”).

* Den mängd minne som används för visning med WriteView-redigeraren, mått i antalet tecken (exklusive inmatade värden, vilka anges som “□” i tabellen).

* Näytön WriteView-editorissa käytämä muisti merkkeinä laskettuna (pois lukien syötetyt arvot, taulukossa merkitty ”□”).

* Den mængde hukommelse, der bruges til visning i WriteView-editoren, målt i tegn (med undtagelse af indtastede værdier, der angives med „□“ i tabellen).

* จำนวนหน่วยความจำ, หน่วยเป็นตัวอักษร, ที่ถูกใช้สำหรับการแสดงผลในWriteView(ไม่นับค่าที่ป้อนซึ่งแสดงโดย“□”ในตาราง)

* كمية الذاكرة المستعملة لغرض العرض في برنامج محرر WriteView. الرموز (باستثناء القيم التي تم ادخالها, المشار اليها في الجدول بالعلامة “□”).

* Jumlah memori yang digunakan untuk kepentingan tampilan dalam editor WriteView, diukur dalam jumlah karakter (tidak termasuk nilai yang dimasukkan, ditunjukkan dalam diagram dengan “□”)

* WriteView 편집기의 화면 표시에 사용되는 메모리 양 (문자 수 기준, 도표에서 “□”로 표시된 사용자 입력 값은 제외).

| <div> <div>30</div> <div></div> </div> | |
|---|---|
| <div> <div>Function</div> <div>Fonction</div> <div>Funktion</div> <div>Función</div> <div>Função</div> <div>Funzioni</div> <div>Functie</div> <div>Függvény</div> <div>Funkce</div> <div>Funktion</div> <div>Funktio</div> <div>Funktion</div> <div>ฟังก์ชัน</div> <div>الدالة</div> <div>Fungsi</div> <div>함수</div> </div> | <div> <div>Dynamic range</div> <div>Plage dynamique</div> <div>zulässiger Bereich</div> <div>Rango dinámico</div> <div>Gama dinâmica</div> <div>Campi dinamici</div> <div>Rekencapaciteit</div> <div>Megengedett számítási tartomány</div> <div>Dynamický rozsah</div> <div>Definitionsområde</div> <div>Dynaaminen ala</div> <div>Dynamikområde</div> <div>พิสัยในการคำนวณ</div> <div>النطاق الديناميكي</div> <div>Kisaran dinamis</div> <div>동적 범위</div> </div> |
| $\sin x, \cos x, \tan x$ | <div> <div>DEG: $x < 10^{10}$</div> <div>(tan.x: $x \neq 90(2n - 1))^*$</div> <div>RAD: $x < \frac{\pi}{180} \times 10^{10}$</div> <div>(tan.x: $x \neq \frac{\pi}{2}(2n - 1))^*$</div> <div>GRAD: $x < \frac{10}{9} \times 10^{10}$</div> <div>(tan.x: $x \neq 100(2n - 1))^*$</div> </div> |
| $\sin^{-1}x, \cos^{-1}x$ | $ x \leq 1$ |
| $\tan^{-1}x, \sqrt[3]{x}$ | $ x < 10^{100}$ |
| $\ln x, \log x, \log_a x$ | $10^{-99} \leq x < 10^{100}, 10^{-99} \leq a < 10^{100} (a \neq 1)$ |
| y^x | <div> <div>• $y > 0$: $-10^{100} < x \log y < 100$</div> <div>• $y = 0$: $0 < x < 10^{100}$</div> <div>• $y < 0$: $x = n$</div> <div>$(0 < x < 1: \frac{1}{x} = 2n - 1, x \neq 0)^*$,</div> <div>$-10^{100} < x \log y < 100$</div> </div> |
| $x\sqrt{y}$ | <div> <div>• $y > 0$: $-10^{100} < \frac{1}{x} \log y < 100 (x \neq 0)$</div> <div>• $y = 0$: $0 < x < 10^{100}$</div> <div>• $y < 0$: $x = 2n - 1$</div> <div>$(0 < x < 1: \frac{1}{x} = n, x \neq 0)^*$,</div> <div>$-10^{100} < \frac{1}{x} \log y < 100$</div> </div> |
| e^x | $-10^{100} < x \leq 230.2585092$ |
| 10^x | $-10^{100} < x < 100$ |
| $\sinh x, \cosh x, \tanh x$ | $ x \leq 230.2585092$ |
| $\sinh^{-1}x$ | $ x < 10^{50}$ |
| $\cosh^{-1}x$ | $1 \leq x < 10^{50}$ |
| $\tanh^{-1}x$ | $ x < 1$ |
| x^2 | $ x < 10^{50}$ |
| x^3 | $ x < 2.15443469 \times 10^{33}$ |
| \sqrt{x} | $0 \leq x < 10^{100}$ |
| x^{-1} | $ x < 10^{100} (x \neq 0)$ |
| $n!$ | $0 \leq n \leq 69^*$ |
| nPr | <div> <div>$0 \leq r \leq n \leq 9999999999^*$</div> <div>$\frac{n!}{(n-r)!} < 10^{100}$</div> </div> |
| nCr | <div> <div>$0 \leq r \leq n \leq 9999999999^*$</div> <div>$0 \leq r \leq 69$</div> <div>$\frac{n!}{(n-r)!} < 10^{100}$</div> </div> |
| \leftrightarrow DEG, D°M'S | $0^\circ 0' 0.00001'' \leq x < 10000^\circ$ |
| $x, y \rightarrow r, \theta$ | $\sqrt{x^2 + y^2} < 10^{100}$ |
| $r, \theta \rightarrow x, y$ | <div> <div>$0 \leq r < 10^{100}$</div> <div>DEG: $\theta < 10^{10}$</div> <div>RAD: $\theta < \frac{\pi}{180} \times 10^{10}$</div> <div>GRAD: $\theta < \frac{10}{9} \times 10^{10}$</div> </div> |
| DRG► | <div> <div>DEG \rightarrow RAD, GRAD \rightarrow DEG: $x < 10^{100}$</div> <div>RAD \rightarrow GRAD: $x < \frac{\pi}{2} \times 10^{98}$</div> </div> |
| $(A + Bi) + (C + Di)$ | $ A + C < 10^{100}, B + D < 10^{100}$ |
| $(A + Bi) - (C + Di)$ | $ A - C < 10^{100}, B - D < 10^{100}$ |
| $(A + Bi) \times (C + Di)$ | <div> <div>$(AC - BD) < 10^{100}$</div> <div>$(AD + BC) < 10^{100}$</div> </div> |

| | |
|--|--|
| $(A + Bi) \div (C + Di)$ | <div> <div>$\frac{AC + BD}{C^2 + D^2} < 10^{100}$</div> <div>$\frac{BC - AD}{C^2 + D^2} < 10^{100}$</div> <div>$C^2 + D^2 \neq 0$</div> </div> |
| <div> <div>\rightarrow DEC</div> <div>\rightarrow BIN</div> <div>\rightarrow PEN</div> <div>\rightarrow OCT</div> <div>\rightarrow HEX</div> <div>AND</div> <div>OR</div> <div>XOR</div> <div>XNOR</div> </div> | <div> <div>DEC: $x \leq 9999999999$</div> <div>BIN: $1000000000 \leq x \leq 1111111111$</div> <div>$0 \leq x \leq 1111111111$</div> <div>PEN: $2222222223 \leq x \leq 4444444444$</div> <div>$0 \leq x \leq 2222222222$</div> <div>OCT: $4000000000 \leq x \leq 7777777777$</div> <div>$0 \leq x \leq 3777777777$</div> <div>HEX: $FDABF41C01 \leq x \leq FFFFFFFF$</div> <div>$0 \leq x \leq 2540BE3FF$</div> </div> |
| NOT | <div> <div>BIN: $1000000000 \leq x \leq 1111111111$</div> <div>$0 \leq x \leq 1111111111$</div> <div>PEN: $2222222223 \leq x \leq 4444444444$</div> <div>$0 \leq x \leq 2222222221$</div> <div>OCT: $4000000000 \leq x \leq 7777777777$</div> <div>$0 \leq x \leq 3777777777$</div> <div>HEX: $FDABF41C01 \leq x \leq FFFFFFFF$</div> <div>$0 \leq x \leq 2540BE3FE$</div> </div> |
| NEG | <div> <div>BIN: $1000000001 \leq x \leq 1111111111$</div> <div>$0 \leq x \leq 1111111111$</div> <div>PEN: $2222222223 \leq x \leq 4444444444$</div> <div>$0 \leq x \leq 2222222222$</div> <div>OCT: $4000000001 \leq x \leq 7777777777$</div> <div>$0 \leq x \leq 3777777777$</div> <div>HEX: $FDABF41C01 \leq x \leq FFFFFFFF$</div> <div>$0 \leq x \leq 2540BE3FF$</div> </div> |

* n, r: integer / entier / ganze Zahlen / entero / inteiro / intero / geheel getal / egész számok / celé číslo / hetal / kokonaisluku / hetal / จำนวนเต็ม / عدد صحيح / bilangan bulat / 정수

Nur für Deutschland/For Germany only:

Umweltschutz

Das Gerät wird durch eine Batterie mit Strom versorgt. Um die Batterie sicher und umweltschonend zu entsorgen, beachten Sie bitte folgende Punkte:

- Bringen Sie die leere Batterie zu Ihrer örtlichen Mülldeponie, zum Händler oder zum Kundenservice-Zentrum zur Wiederverwertung.
- Werfen Sie die leere Batterie niemals ins Feuer, ins Wasser oder in den Hausmüll.

Seulement pour la France/For France only:

Protection de l'environnement

L'appareil est alimenté par pile. Afin de protéger l'environnement, nous vous recommandons:

- d'apporter la pile usagée ou à votre revendeur ou au service après-vente, pour recyclage.
- de ne pas jeter la pile usagée dans une source de chaleur, dans l'eau ou dans un vide-ordures.

Endast svensk version/For Sweden only:

Miljöskydd

Denna produkt drivs av batteri. Vid batteribyte skall följande iakttas:

- Det förbrukade batteriet skall inlämnas till batteriinsamling eller till kommunal miljöstation för återinsamling.
- Kasta ej batteriet i vattnet eller i hushållsoporna. Batteriet får ej heller utsättas för öppen eld.

For Europe only:

SHARP

SHARP ELECTRONICS (Europe) GmbH


Sonninstraße 3, D-20097 Hamburg

SHARP CORPORATION


OPMERKING: ALLEEN VOOR NEDERLAND/
NOTE: FOR NETHERLANDS ONLY

NL

Batterij niet weggooiën, maar inleveren als KCA.



For Australia/New Zealand only:
For warranty information please see www.sharp.net.au.



Attention: Your product is marked with this symbol. It means that used electrical and electronic products should not be mixed with general household waste. There is a separate collection system for these products.

A. Information on Disposal for Users (private households)


1. In the European Union
Attention: If you want to dispose of this equipment, please do not use the ordinary dust bin!
Used electrical and electronic equipment must be treated separately and in accordance with legislation that requires proper treatment, recovery and recycling of used electrical and electronic equipment.
Following the implementation by member states, private households within the EU states may return their used electrical and electronic equipment to designated collection facilities free of charge*. In some countries* your local retailer may also take back your old product free of charge if you purchase a similar new one.
*) Please contact your local authority for further details.
If you used electrical or electronic equipment has batteries or accumulators, please dispose of these separately beforehand according to local requirements.
By disposing of this product correctly you will help ensure that the waste undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health which could otherwise arise due to inappropriate waste handling.

2. In other Countries outside the EU
If you wish to discard this product, please contact your local authorities and ask for the correct method of disposal.
For Switzerland: Used electrical or electronic equipment can be returned free of charge to the dealer, even if you don't purchase a new product. Further collection facilities are listed on the homepage of www.swico.ch or www.sens.ch.

B. Information on Disposal for Business Users.
1. In the European Union
If the product is used for business purposes and you want to discard it:
Please contact your SHARP dealer who will inform you about the take-back of the product. You might be charged for the costs arising from take-back and recycling. Small products (and small amounts) might be taken back by your local collection facilities.
For Spain: Please contact the established collection system or your local authority for take-back of your used products.

2. In other Countries outside the EU
If you wish to discard of this product, please contact your local authorities and ask for the correct method of disposal.

ENGLISH



Attention : votre produit comporte ce symbole. Il signifie que les produits électroniques usagés ne doivent pas être mélangés avec les déchets ménagers généraux. Un système de collecte séparé est prévu pour ces produits.

A. Informations sur la mise au rebut à l'intention des utilisateurs privés (ménages)


1. Au sein de l'Union européenne
Attention : si vous souhaitez mettre cet appareil au rebut, ne le jetez pas dans une poubelle ordinaire !
Les appareils électriques et électroniques usagés doivent être traités séparément et conformément aux lois en vigueur en matière de traitement, de récupération et de recyclage adéquats de ces appareils. Suite à la mise en oeuvre de ces dispositions dans les Etats membres, les ménages résidant au sein de l'Union européenne peuvent désormais ramener gratuitement* leurs appareils électriques et électroniques usagés sur des sites de collecte désignés. Dans certains pays*, votre détaillant reprendra également gratuitement votre ancien produit si vous achetez un produit neuf similaire.
*) Veuillez contacter votre administration locale pour plus de renseignements.
Si votre appareil électrique ou électronique usagé comporte des piles ou des accumulateurs, veuillez les mettre séparément et préalablement au rebut conformément à la législation locale en vigueur.
En veillant à la mise au rebut correcte de ce produit, vous contribuerez à assurer le traitement, la récupération et le recyclage nécessaires de ces déchets, et préviendrez ainsi les effets néfastes potentiels de leur mauvaise gestion sur l'environnement et la santé humaine.

2. Pays hors de l'Union européenne
Si vous souhaitez mettre ce produit au rebut, veuillez contacter votre administration locale qui vous renseignera sur la méthode d'élimination correcte de cet appareil.
Suisse : les équipements électriques ou électroniques usagés peuvent être ramenés gratuitement au détaillant, même si vous n'achetez pas un nouvel appareil. Pour obtenir la liste des autres sites de collecte, veuillez vous reporter à la page d'accueil du site www.swico.ch ou www.sens.ch.

B. Informations sur la mise au rebut à l'intention des entreprises
1. Au sein de l'Union européenne
Si ce produit est utilisé dans le cadre des activités de votre entreprise et que vous souhaitez le mettre au rebut :
Veuillez contacter votre revendeur SHARP qui vous informera des conditions de reprise du produit. Les frais de reprise et de recyclage pourront vous être facturés. Les produits de petite taille (et en petites quantités) pourront être repris par vos organisations de collecte locales.
Espagne : veuillez contacter l'organisation de collecte existante ou votre administration locale pour les modalités de reprise de vos produits usagés.

2. Pays hors de l'Union européenne
Si vous souhaitez mettre ce produit au rebut, veuillez contacter votre administration locale qui vous renseignera sur la méthode d'élimination correcte de cet appareil.

FRANÇAIS



Achtung: Ihr Produkt trägt dieses Symbol. Es besagt, dass Elektro- und Elektronikgeräte nicht mit dem Hausabfall entsorgt, sondern einem getrennten Rücknahme-system zugeführt werden sollten.

A. Entsorgungsinformationen für Benutzer aus Privathaushalten


1. In der Europäischen Union
Achtung: Werfen Sie dieses Gerät zur Entsorgung bitte nicht in den normalen Hausmüll!
Gemäß einer neuen EU-Richtlinie, die die ordnungsgemäße Rücknahme, Behandlung und Verwertung von gebrauchten Elektro- und Elektronikgeräten vorschreibt, müssen elektrische und elektronische Altgeräte getrennt entsorgt werden.
Nach der Einführung der Richtlinie in den EU-Mitgliedsstaaten können Privathaushalte ihre gebrauchten Elektro- und Elektronikgeräte nun kostenlos an ausgewiesenen Rücknahmestellen abgeben*. In einigen Ländern* können Sie Altgeräte in U. auch kostenlos bei Ihrem Fachhändler abgeben, wenn Sie ein vergleichbares neues Gerät kaufen.
*) Weitere Einzelheiten erhalten Sie von Ihrer Gemeindeverwaltung.
Wenn Ihre gebrauchten Elektro- und Elektronikgeräte Batterien oder Akkus enthalten, sollten diese vorher entnommen und gemäß örtlich geltenden Regelungen getrennt entsorgt werden.
Durch die ordnungsgemäße Entsorgung tragen Sie dazu bei, dass Altgeräte angemessen gesammelt, behandelt und verwendet werden. Dies verhindert mögliche schädliche Auswirkungen auf Umwelt und Gesundheit durch eine unsachgemäße Entsorgung.

2. In anderen Ländern außerhalb der EU
Bitte erkundigen Sie sich bei Ihrer Gemeindeverwaltung nach dem ordnungsgemäßen Verfahren zur Entsorgung dieses Geräts.
Für die Schweiz: Gebrauchte Elektro- und Elektronikgeräte können kostenlos beim Händler abgegeben werden, auch wenn Sie kein neues Produkt kaufen. Weitere Rücknahmesysteme finden Sie auf der Homepage von www.swico.ch oder www.sens.ch.

B. Entsorgungsinformationen für gewerbliche Nutzer
1. In der Europäischen Union
Wenn Sie dieses Produkt für gewerbliche Zwecke genutzt haben und nun entsorgen möchten:
Bitte wenden Sie sich an Ihren SHARP Fachhändler, der Sie über die Rücknahme des Produkts informieren kann. Möglicherweise müssen Sie die Kosten für die Rücknahme und Verwertung tragen. Kleine Produkte (und kleine Mengen) können möglicherweise bei Ihrer örtlichen Rücknahmestelle abgegeben werden.
Für Spanien: Bitte wenden Sie sich an das vorhandene Rücknahmesystem oder Ihre Gemeindeverwaltung, wenn Sie Fragen zur Rücknahme Ihrer Altgeräte haben.

2. In anderen Ländern außerhalb der EU
Bitte erkundigen Sie sich bei Ihrer Gemeindeverwaltung nach dem ordnungsgemäßen Verfahren zur Entsorgung dieses Geräts.

ESPAÑOL




Atención: su producto está marcado con este símbolo. Significa que los productos eléctricos y electrónicos usados no deberían mezclarse con los residuos domésticos generales. Existe un sistema de recogida independiente para estos productos.

A. Riformazioni sullo smaltimento per gli utenti (privati)

1. Nell'Unione europea
Attenzione: Per smaltire il presente dispositivo, non utilizzare il normale bidone della spazzatura!
L'apparecchiature elettriche ed elettroniche usate devono essere gestite a parte e in conformità alla legislazione che richiede il trattamento, il recupero e il riciclaggio adeguato dei suddetti prodotti. In seguito alle disposizioni attuate dagli Stati membri, i privati residenti nella UE possono conferire gratuitamente le apparecchiature elettriche ed elettroniche usate a centri di raccolta designati*. In alcuni paesi*, anche il rivenditore locale può ritirare gratuitamente il vecchio prodotto se l'utente acquista un altro nuovo di tipologia simile.
*) Per maggiori informazioni si prega di contattare l'autorità locale competente.
Se le apparecchiature elettriche o elettroniche usate hanno batterie o accumulatori, l'utente dovrà smaltirli a parte preventivamente in conformità alle disposizioni locali.
Lo smaltimento corretto del presente prodotto contribuirà a garantire che i rifiuti siano sottoposti al trattamento, al recupero e al riciclaggio necessari prevenendone il potenziale impatto negativo sull'ambiente e sulla salute umana, che potrebbe derivare da un'adeguata gestione dei rifiuti.

2. In paesi che non fanno parte dell'UE
Se si desidera eliminare il presente prodotto, contattare le autorità locali e informarsi sul metodo di smaltimento corretto.

ESPAÑOL



Atención: El dispositivo es contrasignado de este símbolo, que señala de no smaltire le apparecchiature elettriche ed elettroniche insieme ai normali rifiuti domestici. Per tali prodotti è previsto un sistema di raccolta a parte.

A. Informações sobre a Eliminação de Produtos para os Utilizadores (particulares)


1. Na União Europeia
Atenção: Se quiser eliminar este equipamento, não deve fazer juntamente com o lixo doméstico comum!
O equipamento eléctrico e electrónico deve ser tratado separadamente e ao abrigo da legislação aplicável que obriga a um tratamento, recuperação e reciclagem adequados de equipamentos eléctricos e electrónicos usados.
Após a implementação desta legislação por parte dos Estados-membros, todos os cidadãos residentes na União Europeia poderão entregar o seu equipamento eléctrico e electrónico usado em estações de recolha específicas a título gratuito*. Em alguns países* o seu revendedor local também pode recolher o seu equipamento usado a título gratuito na compra de um novo equipamento.
*) Contacte as entidades locais para mais informações.
Se o seu equipamento eléctrico e electrónico usado funcionar a pilhas ou baterias, deverá eliminá-las em separado, conforme a legislação local, e antes de entregar o seu equipamento.
Ao eliminar este produto correctamente estará a contribuir para que o lixo seja submetido aos processos de tratamento, recuperação e reciclagem adequados. Desta forma é possível evitar os efeitos nocivos que o tratamento inadequado do lixo poderia provocar no ambiente e na saúde.

2. Em outros Países fora da UE
Se quiser eliminar este produto, contacte as entidades locais e informe-se sobre o método correcto para proceder à sua eliminação.
Na Suíça: O equipamento eléctrico e electrónico é aceite, a título gratuito, em qualquer revendedor, mesmo que não tenha adquirido um novo produto. Poderá encontrar uma lista das estações de recolha destes equipamentos na página da Web www.swico.ch ou www.sens.ch.

B. Informações sobre a Eliminação de Produtos para Utilizadores-Empresas.
1. Na União Europeia
Se o produto for usado para fins comerciais e quiser eliminá-lo: Contacte o seu revendedor SHARP que irá informá-lo sobre a melhor forma de eliminar o produto. Poderá ter de pagar as despesas resultantes da recolha e reciclagem do produto. Alguns produtos mais pequenos (e em pequenas quantidades) poderão ser recolhidos pelas estações locais.
Na Espanha: Contacte o sistema de recolhas público ou as entidades locais para mais informações sobre a recolha de produtos usados.

2. Em outros Países fora da UE
Se quiser eliminar este produto, contacte as entidades locais e informe-se sobre o método correcto para proceder à sua eliminação.

ITALIANO




Atención: O seu produto está identificado com este símbolo. Significa que os produtos eléctricos e electrónicos não devem ser misturados com o lixo doméstico comum. Existe um sistema de recolhas específico para estes produtos.

A. Informazioni sullo smaltimento per gli utenti commerciali

1. Nell'Unione europea
Se il prodotto è impiegato a scopi commerciali, procedere come segue per eliminarlo.
Contattare il proprio rivenditore SHARP che fornirà informazioni circa il ritiro del prodotto. Potrebbero essere addebitate le spese di ritiro e riciclaggio. Prodotti piccoli (e quantitativi ridotti) potranno essere ritirati anche dai centri di raccolta locali.
Per la Spagna: Contattare il sistema di raccolta ufficiale o l'ente locale preposto al ritiro dei prodotti usati.

2. In paesi che non fanno parte dell'UE
Se si desidera eliminare il presente prodotto, contattare le autorità locali e informarsi sul metodo di smaltimento corretto.

PORTUGUÊS



Atenção: O seu produto está identificado com este símbolo. Significa que os produtos eléctricos e electrónicos não devem ser misturados com o lixo doméstico comum. Existe um sistema de recolhas específico para estes produtos.

A. Informações sobre a Eliminação de Produtos para os Utilizadores (particulares)

1. Na União Europeia
Atenção: Se quiser eliminar este equipamento, não deve fazer juntamente com o lixo doméstico comum!
O equipamento eléctrico e electrónico deve ser tratado separadamente e ao abrigo da legislação aplicável que obriga a um tratamento, recuperação e reciclagem adequados de equipamentos eléctricos e electrónicos usados.
Após a implementação desta legislação por parte dos Estados-membros, todos os cidadãos residentes na União Europeia poderão entregar o seu equipamento eléctrico e electrónico usado em estações de recolha específicas a título gratuito*. Em alguns países* o seu revendedor local também pode recolher o seu equipamento usado a título gratuito na compra de um novo equipamento.
*) Contacte as entidades locais para mais informações.
Se o seu equipamento eléctrico e electrónico usado funcionar a pilhas ou baterias, deverá eliminá-las em separado, conforme a legislação local, e antes de entregar o seu equipamento.
Ao eliminar este produto correctamente estará a contribuir para que o lixo seja submetido aos processos de tratamento, recuperação e reciclagem adequados. Desta forma é possível evitar os efeitos nocivos que o tratamento inadequado do lixo poderia provocar no ambiente e na saúde.

2. Em outros Países fora da UE
Se quiser eliminar este produto, contacte as entidades locais e informe-se sobre o método correcto para proceder à sua eliminação.



Let op: Uw product is van dit merkken voorzien. Dit betekent dat afgedankte elektrische en elektronische apparatuur niet samen met het normale huishafval mogen worden weggegooid. Er bestaat een afzonderlijk inzamelings-systeem voor deze producten.

A. Informatie over afvalverwijdering voor gebruikers (particuliere huishoudens)

1. In de Europese Unie

Let op: Deze apparatuur niet samen met het normale huishafval weggoeien!

Algedankte elektrische en elektronische apparatuur moet gescheiden worden ingezameld conform de wetgeving inzake de verantwoordde verwerking, terugwinning en recycling van afgedankte elektrische en elektronische apparatuur.

Na de invoering van de wet door de lidstaten mogen particuliere huishoudens in de lidstaten van de Europese Unie hun afgedankte elektrische en elektronische apparatuur kosteloos "naar hietste aangewezen inzamelingsinrichtingen brengen". In sommige landen* kunt u bij de aanschaf van een nieuw apparaat het oude product kosteloos bij uw lokale distributeur inleveren.

*) Neem contact op met de plaatselijke autoriteiten voor verdere informatie.

In uw elektrische of elektronische apparatuur batterijen of accumulatoren bevat dan moet u deze afzonderlijk conform de plaatselijke voorschriften weggoien.

Door dit product op een verantwoorde manier weg te gooien, zorgt u ervoor dat het afval de juiste verwerking, terugwinning en recycling ondergaat en potentiële negatieve effecten op het milieu en de menselijke gezondheid worden voorkomen die anders zouden ontstaan door het verkeerd verwerken van het afval.

2. In andere landen buiten de Europese Unie

Als u dit product wilt weggoien, neem dan contact op met de plaatselijke autoriteiten voor informatie omtrent de juiste verwijderingsprocedure.

Voor Zwitserland: U kunt afgedankte elektrische en elektronische apparatuur kosteloos bij de distributeur inleveren, zelfs als u geen nieuw product koopt. Aanvullende inzamelingsinrichtingen zijn vermeld op de startpagina van www.swico.ch of www.sens.ch.

B. Informatie over afvalverwijdering voor bedrijven.

1. In de Europese Unie

Als u het product voor zakelijke doeleinden heeft gebruikt en als u dit wilt weggoien:

Neem contact op met uw SHARP distributeur die u inlichtingen verschaft over de terugname van het product. Het kan zijn dat u een afvalverwijderingsbijdrage voor de terugname en recycling moet betalen. Kleine producten (en kleine hoeveelheden) kunnen door de lokale inzamelingsinrichtingen worden verwerkt.

Voor Spanje: Neem contact op met de inzamelingsinrichting of de lokale autoriteiten voor de terugname van uw afgedankte producten.

2. In andere landen buiten de Europese Unie

Als u dit product wilt weggoien, neem dan contact op met de plaatselijke autoriteiten voor informatie omtrent de juiste verwijderingsprocedure.

NEDERLANDS



OBS! Produkten är märkt med symbolen ovan. Denna symbol indikerar att elektroniska produkter inte ska kastas i det vanliga hushållsavfallet eftersom det finns ett separat avfallsanbringnings-system för dem.

A) Information om återvinning av elektrisk utrustning för hushåll

1. EU-länder

OBS! Kasta inte denna produkt i soporna!

Förbrukad elektrisk utrustning måste hanteras i enlighet med gällande miljöstiftning och återvinningsföreskrifter.

I enlighet med gällande EU-regler ska hushåll ha möjlighet att lämna in elektrisk utrustning till återvinningsstationer utan kostnad.* I vissa länder* kan det även hända att man gratis kan lämna in gamla produkter till återförsäljaren när man köper en ny liknande enhet.

* Kontakta kommunen för vidare information.

Om utrustningen innehåller batterier eller ackumulatorer ska dessa först avlägsnas och hanteras separat i enlighet med gällande miljöföreskrifter.

Genom att hantera produkten i enlighet med dessa föreskrifter kommer den att tas om hand och återvinnas på tillämpligt sätt, vilket förhindrar potentiella negativa hälso- och miljöeffekter.

2. Länder utanför EU

Kontakta de lokala myndigheterna och ta reda på gällande sorterings- och återvinningsföreskrifter om du behöver göra dig av med denna produkt.

B) Information om återvinning för företag

1. EU-länder

Gör så här om produkten ska kasseras:

Kontakta SHARPs återförsäljare för information om hur man går till väga för att lämna tillbaka produkten. Det kan hända att en avgift för transport och återvinning tillkommer. Mindre skrymmande produkter (om det rör sig om ett fåtal) kan eventuellt återlämnas till lokala återvinningsstationer.

2. Länder utanför EU

Kontakta de lokala myndigheterna och ta reda på gällande sorterings- och återvinningsföreskrifter om du behöver göra dig av med denna produkt.

SVENSKA



Huomio: Tuote on merkitty täällä symbolilla. Tämä tarkoittaa, että käytettyjä sähkö- ja elektroniikkalaitteita ei saa sekoittaa kotitalouden yleisjätteen kanssa. Näille tuotteille on olemassa erillinen keräysjärjestelmä.

A. Hävitysohjeet käyttäjälle (yksityiset kotitaloudet)

1. Euroopan unionissa

Huomio: Jos haluat hävittää tämän laitteen, älä kätää tavallista jättesäiliötä.

Käytetyt sähkö- ja elektroniikkalaitteet pitää hävittää erikseen noudattaen lainsäädäntöä, joka takaa käytettyjen sähkö- ja elektroniikkalaitteiden oikean hävityksen, keräämisen ja kierrättämisen.

Jäsenvaltioiden täytäntönpaanoa seuraten yksityiset kotitaloudet EU:n jäsenvaltioissa voivat palauttaa käytetyt sähkö- ja elektroniikkalaitteet määrättyihin keräyspakkoihin ilmaiseksi*. Joissakin maissa* paikalliset hävittämissyytiät voivat myös ottaa vastaan vanhan tuotteen ilmaiseksi, jos asiakas ostaa vastavaan uuden tuotteen.

*) Pyydä lisätietoja paikallisviranomaisilta.

Jos käytetyssä sähkö- tai elektroniikkalaitteissa käytetään paristoja tai akkuja, hävitä nämä tuotteet erikseen erikseen paikallisten säädösten mukaisesti.

Hävittämällä tuotteen asianmukaisesti, autat varmistamaan, että jätteen käsitellään, kerätään ja kierrätetään asianmukaisella tavalla. Näin välttään hallitaisla ympäristö- ja terveysvaikutuksia, joita saattaa olla seuraamuksena jätteen epäasianmukaisesta hävittäytstä.

2. Muissa maissa EU:n ulkopuolella

Jos haluat hävittää tuotteen, ota yhteyks paikallisiin viranomaisiin ja pyyd ohjeita tuotteen asianmukaiseen hävittämiseen.

B. Hävitysohjeet yrityskäyttäjälle.

1. Euroopan unionissa

Jos tuotetta on käytetty yritysikäytössä, ja haluat hävittää sen,

ota yhteys SHARP-jälleenmyyjään, joka antaa sinulle lisäohjeita tai ottaa tuotteen vastaan. Sinulta saatetaan veloitaa tuotteen vastaanottamisesta ja kierrätyksestä jättyvät kustannukset. Paikalliset keräyspisteet saattavat ottaa vastaan pienet tuotteet (ja pienet määrit).

2. Muissa maissa EU:n ulkopuolella

Jos haluat hävittää tuotteen, ota yhteyks paikallisiin viranomaisiin ja pyyd ohjeita tuotteen asianmukaiseen hävittämiseen.

SUOMI



OBS: Produktet vil have dette symbol. Det betyder at der er tale om elektrisk eller elektronisk udstyr som ikke bør blandes med det almindelige husholdningsaffald. Der findes et særskilt genbrugs-system til sådanne produkter.

A. Oplysninger om kassering og genbrug for brugere (private husholdninger)

1. Inden for EU

OBS: Hvis du ønsker at kassere dette apparat, bør du ikke komme det i din almindelige skraldespand.

Brugt elektrisk og elektronisk udstyr skal behandles særskilt og i overensstemmelse med loven om korrekt behandling og genbrug af brugt elektrisk og elektronisk udstyr.

Som følge af EU-medlemslandenes implementering af denne lov, har private husholdnde i EU ret til gratis*, at aflevere deres brugte elektriske og elektroniske udstyr på angivne genbrugspladser. I nogle lande* er det muligvis gratis, at indlevere det brugte produkt hos den lokale forhandler, hvis du køber et tilsvarende nyt produkt.

*) Kontakt de lokale myndigheder hvis du ønsker yderligere oplysninger.

Hvis dit brugte elektriske eller elektroniske udstyr indeholder batterier eller akkumulatorer, bedes du skille dig af med dem, i overensstemmelse med den lokale lovgivning, for din indleverer udstyret.

Ved at kassere dette apparat korrekt, vil du være med til at sikre, at vores affald behandles og genbruges rigtigt. Derved udsættes hverken miljøet eller vores helbred for overlast som følge af uhensigtsmæssig affaldshåndtering.

2. I lande uden for EU

Hvis du ønsker at skille dig af med dette produkt, bedes du kontakte de lokale myndigheder og spørge dem om, hvorledes produktet kasseres korrekt.

B. Oplysninger om kassering og genbrug for virksomheder.

1. Inden for EU

Hvis dette produkt bruges i forbindelse med virksomhedsdrift, og du ønsker at skille dig af med det:

Du bedes kontakte din SHARP-forhandler, som vil fortælle dig hvordan produktet kan indleveres. Du vil muligvis skulle betale for omkostningerne i forbindelse med indlevering og genbrug. Små produkter (i små mængder) kan muligvis afleveres på den lokale genbrugsplads.

2. I lande uden for EU

Hvis du ønsker at skille dig af med dette produkt, bedes du kontakte de lokale myndigheder og spørge dem om, hvorledes produktet kasseres korrekt.

DANSK



Upozornění: Váš výrobek je označen tímto symbolem. Znamená to, že je zakázáno likvidovat použitý elektrický nebo elektronický výrobek v běžném domácím odpadu. Pro tyto výrobky je k dispozici samostatný sběrný systém.

A. Informace o likvidaci pro uživatele (domácnosti)

1. V zemích Evropské unie

Upozornění: Toto zařízení nelikvidujte v běžných odpadkových koších!

Použitě elektrické a elektronické vybavení je třeba likvidovat samostatně a v souladu s legislativou, která vyžaduje řádnou likvidaci, obnovu i recyklaci použitého elektrického a elektronického vybavení.

Na základě dohody členských států mohou domácnosti v zemích Evropské unie vracet použitě elektrické a elektronické vybavení v urbých sběrných zdárně*. V některých zemích* od vás může místní prodejce odebrat zdárma použitý výrobek, pokud zakoupíte nový podobný.

*) Další podrobnosti vám sdělí orgány místní správy.

Pokud použitě elektrické nebo elektronické vybavení obsahuje baterie nebo akumulátory, zlikvidujte je předem samostatně v souladu s místními vyhláškami.

Řádnou likvidaci tohoto výrobku pomoháte zajistit, že bude odpad vhodným způsobem zlikvidován, obnoven a recyklován a zabráníte tak možnému poškození životního prostředí a zdraví obyvatel, ke kterému by mohlo dojít v případě nesprávné likvidace.

2. V ostatních zemích mimo Evropskou unii

Chcete-li tento výrobek zlikvidovat, obraťte se na místní správní orgány, které vás seznámí s vhodnou metodou likvidace.

B. Informace o likvidaci pro podnikatelské subjekty.

1. V zemích Evropské unie

Chcete-li zlikvidovat výrobek, který je používán pro podnikatelské účely:

Obraťte se na prodejce SHARP, který vás informuje o odebrání výrobku. Odebrání a recyklace mohou být započteny. Malé výrobky (a malé množství) mohou odebrat místní sběrný odpad.

2. V ostatních zemích mimo Evropskou unii.

Chcete-li tento výrobek zlikvidovat, obraťte se na místní správní orgány, které vás seznámí s vhodnou metodou likvidace.

ČESKY



Figyelem: A terméket ezzel a jelöléssel láták el. Ez azt jelenti, hogy a használt elektronikus és elektronikus termékeket nem szabad az általános háztartási hulladékkal keverni. Ezekhez a termékekhez külön hulladékgyűjtő rendszer üzemel.

A. Hulladék-elhelyezési tájékoztató felhasználók részére (magán háztartások)

1. Az Európai Unióban

Figyelem: Ha a készüléket ki akarja selejtezni, kérjük, ne a közönséges szemetesekükat használja!

A használt elektronkos és elektronikus berendezéseket külön, és a használt elektronkos és elektronikus berendezések szabványosú kezeléséről, visszanyeréséről és újrahasznosításáról rendelkező jogszabályokkal összhangban kell kezelni.

A tagállamok általi végrehajtást követően az EU államokon belül a magán háztartások használt elektronkos és elektronikal berendezéseiket díjmentesen juttathatják vissza a kijelölt gyűjtőlétesítményekbe*. Egyes országokban* a helyi kiskereskedés is díjmentesen visszaveheti Öntől a régi terméket, ha hasonló új terméket vásárol.

*) A további részletekről, kérjük, érdeklődjön az önkormányzatnál.

Ha használt elektronkos vagy elektronikus berendezésében elemek vagy akkumulátorok vannak, kérjük, előzetesen ezeket selejtezzze ki a helyi előírásoknak megfelelően.

A termék szabványosú kislejezésével Ön segít biztosítani azt, hogy a hulladék kersztülmenjen a szükséges kezelésen, visszanyerési és újrahasznosítási eljárson, ezáltal közreműködik a lehetséges káros környezeti és hman egészségi hatások megelőzésében, amelyek ellenköz esetben a helytelen hulladékezelés következtében előállhatnak.

2. Az EU-n kívüli egyéb országokban

Ha a terméket ki szeretné selejtezni, kérjük, forduljon az önkormányzatához, és érdeklődjön a helyes hulladék-elhelyezési módszeről.

B. Hulladék-elhelyezési tájékoztató vállalat felhasználók részére.

1. Az Európai Unióban

Ha a terméket üzleti célokra használta, és ki kívánja selejtezni: Kérjük, forduljon a SHARP kereskedőhöz, ahol tájékoztatják Önt a termék visszavételéről. Lehetséges, hogy a visszavételből az újrahasznosításból eredő költségeket felszámítsák. Előfordulhat, hogy a helyi hulladékgyűjtő létesítmény átveszi a kisebb termékeket (és kis mennyiségeket).

2. Az EU-n kívüli egyéb országokban

Ha a terméket ki szeretné selejtezni, kérjük, forduljon az önkormányzatához, és érdeklődjön a helyes hulladék-elhelyezési módszeről.

MAGYAR